ROYAL GARDENS, KEW.

# BULLETIN

OF

# MISCELLANEOUS INFORMATION.

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## DLIII.—MYCOLOGIC FLORA OF THE ROYAL GARDENS, KEW.

The area of the Royal Gardens is a little more than 250 acres. If some adjacent pieces of Royal property are thrown in the total is some 300 acres, or nearly half a square mile. Taken with the Old Deer Park to the south, the whole space is singularly isolated, bounded as it is on three sides by the bend of the river sweeping round from Kew to Richmond, and on the other by the high road between these two places.

Of the Royal Gardens themselves some 100 acres is little disturbed by any kind of cultivation, and it has certainly remained so for at least a century and a half. Some portions may never possibly have been subjected to cultivation at all. It is not surprising therefore that in the background of horticultural treatment there still subsists a wild fauna and flora of no inconsiderable dimensions. This, as opportunity offers, it is proposed to work out and catalogue from time to time. Mr. G. Nicholson, A.L.S., the present Curator, enumerated the flowering plants occurring spontaneously in the *Journal of Botany* for 1875. A striking peculiarity of this list "is the very small number of naturalised exotics."

In the case of Fungi, as will be seen from the following enumeration by Mr. G. Massee, F.L.S., Principal Assistant in the Herbarium, the case is very different.

The following enumeration of 337 genera and 1340 species illustrates the richness of the Mycologic Flora of the Royal Gardens, which far surpasses in point of numbers, as also in the variety of rare and interesting species, any other record for an equal area.

This is only perhaps what would be expected, when the large annual influx of plants to Kew from all quarters of the globe is taken into consideration. By this means microscopic fungi, parasitic or saprophytic on plants, are introduced in a living condition on the various hosts, whereas the higher forms belonging to the Agaricineæ and the Gastromycetes are usually introduced along with soil, or frequently on the trunks of tree-ferns, either in the form of spores, or in an undeveloped condition.

It is worthy of note that the *Polyporeæ* and *Thelephoreæ*, so abundant in tropical regions, are absent from the list as introduced species.

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As illustrative of the exotic element may be mentioned *Hiatula Wynniæ*, Berk. and Broome, first described (*Ann. Mag. Nat. Hist.*, 1879, p. 206), from specimens found in a stove in the Gardens; this species has recently been received from the neighbourhood of Brisbane, where it is not uncommon, and said to be luminous, emitting a pale green light. It is figured by Cooke (*Illustr. Brit. Fung.*, pl. 688). *Flammula purpurata*, Cke. & Mass., a very beautiful fungus, was established (*Grev.*, xviii., 73) from specimens growing on the trunk of a tree-fern in one of the fern-houses, and has since been received from New Zealand, its undoubted home. *Aserŏe rubra*, La Bill., the most beautiful of the many quaint forms belonging to the Gasteromycetes, a native of Queensland, also occurred in a stove, some time previous to the year 1867; the specimens are at present in the Herbarium. The genus *Chitonia*, including only four known species, is represented by *C. rubriceps*, Cke. & Mass. (*Grev.*, xv., 57), found on soil in the Aroid House, but although a typical member of an exotic genus, no clue as to its native habitat has yet been obtained.

Coming to microscopic forms, we find that the list contains a still greater per-centage of introduced species, *i.e*, species new to the British list, and growing on exotic plants. The genus *Phoma* heads the list with 107 species, of which above three-fourths have been met with only at Kew, so far as the British Isles are concerned, and of these above thirty were first established from Kew material by Dr. Cooke, who paid special attention to this genus.

Not a single example, however, of a parasitic fungus, that has proved to be destructive to plants, has been introduced to Europe through Kew.

The indigenous species of fungi belonging to the Agaricineæ—probably due to a great extent to the absence of cattle in the grounds—are fewer than would be expected, with the following notable exceptions. In the genus *Russula* fifty-two species have been observed during the last ten years, out of a total of sixty-one British species. The large size and brilliant colouring of most species belonging to this genus render them very conspicuous objects in the Arboretum during late summer and early autumn. Another genus containing species of sufficient size and brilliancy of colour to attract popular attention is *Boletus*, which numbers twenty-six species.

A fairly good collection of specimens of fungi, along with models and drawings, are exhibited in No. 2 Museum.

A word of thanks is due to the members of the Garden staff, interested in Mycology, for the discovery of numerous species, which, but for their zeal, would not have appeared in the present list.

The host-plant, or matrix, on which each fungus occurred, has been given, and also the locality for the larger species that are likely to occur again. Finally, notes have been added, indicating the edible and poisonous species of the Agaricineæ, also the parasitic species that are known to be destructive to plants.

The species of Myxogastres occurring at Kew are given in an Appendix at the end.

Explanation of the abbreviations used :—

A. Arboretum ;
B. Botanic Garden ;
P. Palace and Herbarium Grounds;
Q. Queen's Cottage Grounds.

# BASIDIOMYCETES.

## Hymenomycetes.

AGARICINEÆ.

**Amanita**, *Fries.*

**A. virosa**, *Fries.*
Among grass. Poisonous. A.

**A. Mappa**, *Batsch.*
Under beeches, A.

**A. phalloides**, *Fries.*
A dangerous species. It has been proved that a large percentage of the accidents caused by fungus poisoning, both in this country and on the Continent, have been caused by this species. A figure is exhibited in No. 2 Museum.

**A. muscaria**, *L.*
A large, showy fungus, the cap when expanded often as large as a dinner-plate, brilliant crimson with white spots. Very poisonous. Q.

**A. rubescens**, *Pers.*
Edible, flavour mild; the flesh of cap and stem turns red when broken. Care must be taken not to confound this species with *Amanita pantherina*, which is poisonous. A., Q.

**A. pantherina**, *DC.*
Under trees. Poisonous. The flesh remains perfectly white when broken. A.

**A. spissa**, *Fries.*
Under beeches. A.

**Amanitopsis**, *Karsten.*

**A. vaginata**, *Karsten.*
Edible, flavour very delicate. Colour of cap variable, grey, buff, orange, or white. A., Q.

**Lepiota**, *Fries.*

**L. procera**, *Scop.*
Edible. Popularly known as the parasol mushroom, on account of its shape. Sometimes very large, a specimen from the Arboretum had a stem 16 inches long, and pileus 11 inches across. A., B., Q.

**L. rachodes**, *Vitt.*
Edible; similar in flavour and appearance to *L. procera*. Q.
Var. puellaris, *Fries.* A.

**L. excoriata**, *Schaeff.*
Edible. B.

**L. leucothites**, *Vitt.*
Edible. B.

**L. Badhami**, *Berk. & Broome.*
Under *Sequoia sempervirens*. A.

**L. emplastra**, *Cke. & Mass.*
Under *Cedrus Libani*. This species was founded on specimens collected in the gardens and is described (*Grev.*, xviii., 51). A figure is given in *Illustr. Brit. Fungi*, pl. 1164. A.

**L. clypeolaria**, *Bull.* A.

**L. cristata**, *Fries.* A.

**L. cepæstipes**, *Sow.*
On soil in conservatory.
Var. cretaceus, *Bull.*
In a stove.

**L. licmophora**, *Berk. & Broome.*
On soil in Palm house. A very elegant fungus, a native of Ceylon, established by Berkeley and Broome (*Journ. Linn. Soc., Bot.* xi., 500); figured in Cooke's *Illustr. Brit. Fungi*, pl. 1179.

**L. carcharia**, *Pers.*
Under *Pinus sylvestris*. A.

**L. granulosa**, *Batsch.*
Under *Pinus sylvestris*. A.

**L. martialis**, *Cke. & Mass.*
On palm stem in Palm house.

**L. ianthina**, *Cke.*
On soil in a stove.

**L. felina**, *Pers.*
On the ground. A.

Armillaria, *Fries.*

**A. mellea,** *Vahl.*

On the ground, round roots of trees. A destructive parasite, destroying trees, especially attacking those that have been injured near the base of the trunk. When the disease is once established, the cord-like mycelium or spawn spreads in the ground until it comes in contact with the roots of another tree, which is attacked in turn. Edible, but lacking flavour. A., B., Q.

**A. Citri,** *Inzeng.*

On stump. B.

Tricholoma, *Fries.*

**T. portentosum,** *Fries.*

Under trees. A.

**T. flavo-brunneum,** *Fries.*

Under trees. Q.

**T. albo-brunneum,** *Pers.*

Under trees. A.

**T. rutilans,** *Schaeff.*

On stumps. B.

**T. imbricatum,** *Fries.*

Under trees. A.

**T. terreum,** *Fries.*

Under trees. Q.

**T. saponaceum,** *Fries.*

On the ground. A. and B.

**T. sulfureum,** *Bull.*

On the ground. A., P.

**T. ionides,** *Bull.*

Among grass. A.

**T. carneum,** *Bull.*

Among grass. A.

**T. album,** *Schaeff.*

Among grass under trees. A.,Q.

**T. duracinum,** *Cke.*

Under beeches. First observed at Kew. Described (*Grev.*, xii., 41); figured (*Illustr. Brit. Fung.*, pl. 640). A.

**T. personatum,** *Fries.*

Among grass. Edible. One of the few species which, in addition to the common mushroom, may sometimes be seen offered for sale under the name of "Blewitts" or "Blue-caps." A., B.

Tricholoma—*cont.*

**T. nudum,** *Fries.*

Among grass. Edible; preferred by some people to *T. personatum*, which it much resembles. A.

Var. **major,** *Cke.* A.

**T. melaleucum,** *Fries.*

On the naked ground. A., B.

Var. **porphyroleucum,** *Fries.* B.

**T. brevipes,** *Bull.*

On the ground. A.

**T. humile,** *Fries.*

On heaps of dead leaves. A.

**T. sordidum,** *Fries.*

On heaps of dead leaves. A.

**T. Pes-capræ,** *Schaeff.*

On the ground under beeches. A.

**T. circumtectum,** *Cke. & Mass.*

Under beeches. First found in the gardens in 1886, and afterwards in abundance in Yorkshire (*Cke.*, *Hdbk.*, ed. ii., 382; *Illustr. Brit. Fung.*, pl. 1182). A.

**T. tenuiceps,** *Cke. & Mass.*

Under trees. (*Cke. Hdbk.*, ed. ii., 398; *Illustr. Brit. Fung.*, pl. 1166.) A.

**T. Russula,** *Schaeff.*

Among grass. A.

**T. subpulverulentum,** *Fries.*

Among grass. A.

**T. cuneifolium,** *Fries.*

Under trees. P.

**T. grammopodium,** *Fries.*

Among short grass. A., Q.

Clitocybe, *Fries.*

**C. nebularis,** *Batsch.*

Under trees among leaves. Edible; a large fleshy fungus having an excellent flavour, fairly abundant, and not easily

Clitocybe—*cont.*

mistaken for any other species when once understood. Q.

C. clavipes, *Fries.*
Under trees. A.

C. odorus, *Fries.*
On the ground. A., Q.

C. cerussatus, *Fries.*
Under trees. A.

C. phyllophilus, *Fries.*
Among dead leaves. A., Q.

C. pithyophilus, *Fries.*
Among dead leaves. A.

C. tornatus, *Fries.*
Under trees. Q.

C. candicans, *Fries.*
Among leaves. A., P.

C. fumosus, *Pers.*
Among grass by paths. A.

C. infundibuliformis, *Schaeff.*
Among grass. Q.

C. inversus, *Scop.*
Under cedars. P.

C. flaccidus, *Fries.*
Under trees. P.

C. Tuba, *Fries.*
Among grass. Q.

C. cyathiformis, *Fries.*
Under trees. A., B.

C. pruinosus, *Fries.*
Among grass. A.

C. brumalis, *Fries.*
Under trees. Q.

C. metachrous, *Fries.*
Under trees. A., Q.

C. fragrans, *Sow.*
Among grass. A., P.

Laccaria, *Berk. & Broome.*

L. laccata, *Berk. & Broome.*
Among grass under trees. A.

Collybia, *Fries.*

C. radicata, *Fries.*
Among grass. A., B.

C. platyphylla, *Fries.*
On the ground under trees.

Collybia—*cont.*

C. fusipes, *Bull.*
Among grass in open places. Edible. A.

C. maculata, *Alb. & Schw.*
Among grass. A.

C. distorta, *Fries.*
On heaps of dead leaves. A.

C. butyracea, *Bull.*
On the ground under trees. A., Q.

C. stipitaria, *Fries.*
On twigs lying on the ground. B.

C. confluens, *Pers.*
On the ground. A.

C. conigena, *Pers.*
On fallen cones of *Pinus sylvestris.* A.

C. cirrhata, *Schum.*
On the ground among grass and moss. A., Q.

C. tuberosa, *Bull.*
On decaying *Russula nigricans.* A., Q.

C. nitellina, *Fries.*
On the ground. A.

C. esculenta, *Jacq.*
On the ground under trees. A.

C. tenacella, *Pers.*
Under pines. A.

C. dryophila, *Bull.*
On the ground under trees. A., Q.

C. aquosa, *Bull.*
Among grass under trees. A.

C. ocellata, *Fries.*
Among grass. A.

C. muscigena, *Schum.*
On the ground among moss and grass. Q.

C. rancida, *Fries.*
On stumps. A.

C. ambusta, *Fries.*
On burnt ground. A.

C. protracta, *Fries.*
Among leaves lying on the ground. A.

Collybia—*cont.*

C. prolixa, *Fries.*
On the ground near stumps. Q.

Mycena, *Fries.*

M. pelianthina, *Fries.*
Among leaves under trees. A.

M. pura, *Pers.*
On the ground under trees. A., Q.

M. lineata, *Bull.*
Among grass. A.

M. luteo-alba, *Bull.*
Among short grass. A.

M. rugosa. *Fries.*
On stumps. A.

M. galericulata, *Scop.*
On stumps. A., Q.
Var. calopus, *Fries.*
On stumps. A.

M. polygramma, *Bull.*
On stumps. A., B.

M. dissiliens, *Fries.*
Among grass and on a stump. A.

M. atro-cyanea, *Batsch.*
Among grass under trees. Q.

M. alcalina, *Fries.*
On the ground and on stumps and twigs. Q.

M. ammoniaca, *Fries.*
Among grass. A.

M. metata, *Fries.*
Among short grass. A.

M. vitrea, *Fries.*
Among grass. A.

M. vitilis, *Fries.*
Among grass. A.

M. tenella, *Fries.*
Among short grass. A., P.

M. acicula, *Schaeff.*
On leaves and small twigs lying on the ground. B.

M. sanguinolenta, *Alb. & Schw.*
Among dead leaves. A.

M. galopoda, *Pers.*
On the ground among leaves. A., Q

Mycena—*cont.*

M. leucogala, *Cke.*
On a stump. A peculiar little fungus of a dark purple brown colour; when the stem is broken a white milky looking fluid exudes in drops. (*Grev.* xi., 41; *Illustr. Brit. Fung.*, pl. 653.) A.

M. epipterygia, *Scop.*
Among leaves and on branches lying on the ground. A., Q.

M. pelliculosa, *Fries.*
Among grass. A.

M. vulgare, *Pers.*
On twigs and on leaves on the ground. A.

M. consimile, *Cke.*
Among leaves. (*Grev.* xix., 41; *Illustr. Brit. Fung.*, pl. 1186.) Q.

M. citrinella, *Pers.*
Among dead leaves. A.

M. rorida, *Fries.*
Among leaves and moss, and on twigs. A.

M. tenerrima, *Berk.*
On twigs and herbaceous stems. B.

M. discopoda, *Pers.*
On branches, &c. A.

M. corticola, *Schum.*
On bark of trees. A.

M. hiemale, *Osbeck.*
On bark of trees. A.

Omphalia, *Fries.*

O. hydrogramma, *Fries.*
Among leaves under trees. A.

O. pyxidata, *Bull.*
On banks. A.

O. rustica, *Pers.*
On banks. A.

O. hepatica, *Batsch.*
On the ground among moss, &c. P.

O. muralis, *Sow.*
On dry banks. A.

O. infumata, *Berk & Broome.*
Among grass and moss. A.

Omphalia—*cont.*

**O. umbellifera**, *L.*
On banks. A.

**O. retosta**, *Fries.*
Dry places on the ground. P.

**O. griseo-pallida**, *Desm.*
Among dry grass. A., P.

**O. Campanella**, *Batsch.*
Among moss and short grass. A.

**O. Fibula**, *Bull.*
Among short grass. P.
Var. **Swartzii**, *Fries.*
Among grass. A.

Pleurotus, *Fries.*

**P. corticatus**, *Fries.*
On trunks, A.

**P. ulmarius**, *Bull.*
On elm trunks. A., P.

**P. ostreatus**, *Jacq.*
On fallen trunks. Many people are prejudiced against fungi growing on wood or stumps, considering that all such are poisonous; this is true of some species, nevertheless *Pleurotus ostreatus*, the "oyster fungus," so called on account of its cap resembling an oyster-shell in shape, always grows on wood, yet it is universally acknowledged as one of the best and safest of edible fungi. Q.
Var. **euosmus**, *Fries.*
On trunks. A.
Var. **columbinus**, *Bres.*
On stumps, Q.

**P. salignus**, *Fries.*
On willow trunks by the lake. A.

**P. limpidus**, *Fries.*
On rotten wood lying on the ground. A.

**P. tremulus**, *Schaeff.*
On rotten wood. A.

**P. acerinus**, *Fries.*
On fallen trunks. Q.

**P. acerosus**, *Fries.*
On gravel paths and on lawns. A.

Pleurotus—*cont.*

**P. algidus**, *Fries.*
On wood.

**P. septicus**, *Fries.*
On twigs and decaying *Polyporus.*

**P. applicatus**, *Batsch.*
On rotten wood. A.

**P. hypnophilus**, *Pers.*
On moss. A., P.

**P. chioneus**, *Pers.*
On rotten wood. A.

**P. sapidus**, *Kalchbr.*
On elm trunks. Edible. A.

Hygrophorus, *Fries.*

**H. eburneus**, *Bull.*
Among grass under trees. Q.

**H. aureus**, *Arrh.*
Among grass. A.

**H. hypothejus**, *Fries.*
Among grass. A.

**H. mesotephrus**, *Berk. & Broome.*
Among grass. A.

**H. livido-albus**, *Berk. & Broome.*
Among grass. A.

**H. pratensis**, *Pers.*
Among grass in open places. Edible. A.

**H. virgineus**, *Wulf.*
Open grassy places. A.
Var. **roseipes**, *Mass.*
Among grass. A.

**H. niveus**, *Scop.*
Among short grass. A.

**H. fornicatus**, *Fries.*
Among grass. Q.

**H. distans**, *Berk.*
Among grass. Q.

**H. Clarkii**, *Berk. & Broome.*
Among grass. A.

**H. irrigatus**, *Pers.*
Among grass. A.

**H. ceraceus**, *Wulf.*
Among grass. A.

**H. coccineus**, *Schaeff.*
Open places among grass and moss. Q.

Hygrophorus—*cont.*

**H. miniatus**, *Fries.*
Among short grass. Q

**H. puniceus**, *Fries.*
Among grass under trees. A.

**H. obrusseus**, *Fries.*
Short grass in open places. A.

**H. conicus**, *Scop.*
Among grass in open places. A.

**H. calyptræformis**, *Berk.*
Among grass in open places. A.
Var. **niveus**, *Cke.*
Among grass. A.

**H. chlorophanus**, *Fries.*
Grassy places. A., P.

**H. psittacinus**, *Schaeff.*
Among short grass A.

Lactarius, *Fries.*

**L. torminosus**, *Schaeff.*
Among grass. A very elegant fungus of a pale buff colour, and covered, especially near the margin, with shaggy scales. Like all the species of *Lactarius*, this fungus exudes a quantity of milky-looking fluid when broken. In some species this fluid is white, like milk, in others yellow or red. In some species the liquid is insipid, in others, as the present, very hot, and causing a tingling of the tongue. A.

**L. turpis**, *Fries.*
On the ground under trees. A., P.

**L. controversus**, *Pers.*
Under trees. A.

**L. pubescens**, *Schrad.*
Grassy places. A.

**L. blennius**, *Fries.*
On the ground under trees. A., P.

**L. pyrogalus**, *Bull.*
On the ground under trees. A., Q.

**L. quietus**, *Fries.*
Under trees. Q.

Lactarius—*cont.*

**L. aurantiacus**, *Fries.*
Among grass. A.

**L. rufus**, *Scop.*
Under pines. A.

**L. glyciosmus**, *Fries.*
Under trees. A., Q.

**L. volemus**, *Fries.*
On the ground under trees. Edible. A., Q.

**L. serifluus**, *DC.*
Under trees. A., Q.

**L. subdulcis**, *Bull.*
Among grass under trees. A., Q.

**L. camphoratus**, *Bull.*
Under trees. A.

Russula, *Fries.*

**R. nigricans**, *Bull.*
Among grass. A., Q.

**R. albo-nigra**, *Kromb.*
Among grass. A.

**R. adusta**, *Fries.*
Among grass. A., Q.

**R. densifolia**, *Gillet.*
Under beeches. A.

**R. mustelina**, *Fries.*
Under beeches. A.

**R. olivascens**, *Fries.*
Under oaks. A.

**R. furcata**, *Fries.*
Under trees. A., Q.
Var. **pictipes**, *Cke.*
Under trees. A.
Var. **ochroviridis**, *Cke.*
Under trees. A.

**R. rosacea**, *Fries.*
Grassy places. A.

**R. maculata**, *Quélet.*
On naked ground under trees. A.

**R. sardonia**, *Fries.*
Among grass. A.

**R. purpurea**, *Fries.*
Under beeches. A.

Russula—*cont.*

**R. lactea,** *Pers.*
Under beeches. A.

Var. **incarnata,** *Quélet.*
Under beeches. A.

**R. virescens,** *Schaeff.*
Among grass. A.

**R. cutefracta,** *Cke.*
Under pines. A.

**R. rubra,** *Fries.*
Among grass under trees. A., Q.

Var. **sapida,** *Quélet.*
Under beeches. A.

**R. Linnaei,** *Fries.*
Under beeches. A.

**R. xerampelina,** *Schaeff.*
Among grass under trees. A., Q.

**R. olivacea,** *Schaeff.*
Under beeches. A.

**R. serotina,** *Quélet.*
Shady places among grass. A.

**R. vesca,** *Fries.*
Among grass under trees. This fungus is edible, and the flavour very good, but as there are so many poisonous species in the genus, it requires knowledge to be certain that you are dealing with the right species. A.

**R. lilacea,** *Quélet.*
Under various trees. A.

**R. cyanoxantha,** *Schaeff.*
Grassy places. A.

**R. heterophylla,** *Fries.*
Among grass under oaks. A.

**R. galochroa,** *Bull.*
Under beeches. A.

**R. consobrina,** *Fries.*
Among grass under trees. A.

Var. **intermedia,** *Cke.*
Under beeches. A.

Var. **sororia,** *Fries.*
Under beeches. A.

Russula—*cont.*

**R. foetens,** *Pers.*
Under trees. A., Q.

**R. subfoetens,** *W. G. Smith.*
Under beeches. A.

**R. fellea,** *Fries.*
Under trees. Entirely pale straw colour, taste very bitter. Poisonous. A.

**R. expallens,** *Gillet.*
Under trees among grass. A.

**R. elegans,** *Bres.*
Among grass under beeches. A.

**R. emetica,** *Fries.*
Among grass. A very beautiful fungus, cap varying from pale rose-colour to deep crimson, remainder snow-white. Very poisonous, nevertheless it appears to be a favourite food plant for slugs and snails, it being often difficult to find a single specimen out of scores that has not been more or less eaten. A.

Var. **Clusii,** *Fries.*
Among grass. A.

Var. **fallax,** *Schaeff.*
Among grass. A.

**R. fingibilis,** *Britz.*
Among grass under oaks. A.

**R. pectinata,** *Bull.*
On the ground under trees. A.

**R. ochracea,** *Fries.*
Under trees. A.

**R. granulosa,** *Cke.*
Under trees. A., Q.

**R. æruginea,** *Fries.*
Among grass. A.

**R. citrina,** *Gillet.*
Grassy and shady places. A.

**R. fragilis,** *Fries.*
Among grass. A.

Var. **niveus,** *Pers.*
Under trees among grass and leaves. A.

Russula—*cont.*

R. punctata, *Gillet.*
Among grass. A.

Var. leucopus, *Cke.*
Among grass. A.

R. veternosa, *Fries.*
Among grass under trees. A.

R. integra, *L.*
Among grass under oaks and beeches. A.

R. decolorans, *Fries.*
Among grass. A.

R. Barlae, *Quélet.*
Under beeches. A.

Var. cuprea, *Kromb.*
Under beeches. A.

R. nitida, *Pers.*
Among short grass under trees. A., Q.

R. alutacea, *Fries.*
Under trees. A.

R. armeniaca, *Cke.*
Under pines. A.

R. puellaris, *Fries.*
Among short grass. A.

Var. intensior, *Cke.*
Among grass. P.

Var. roseipes, *Secr.*
Under beeches among grass. A.

R. ochroleuca, *Pers.*
Among grass under beeches. A.

R. chamaeleontina, *Fries.*
On naked ground under beeches. A.

R. lutea, *Huds.*
Among short grass in shady places. A., Q.

R. nauseosa, *Pers.*
Among short grass. A.

R. vitellina, *Pers.*
Under trees. A.

Cantharellus, *Fries.*

C. cibarius, *Fries.*
Under beeches. A thick, fleshy fungus of a uniform pale, dull orange colour, and an agreeable smell, resembling that of apricots. Generally acknowledged throughout Europe as one of the best among edible fungi, if properly prepared. A.

Cantharellus—*cont.*

C. aurantiacus, *Fries.*
Among short grass in damp places. Somewhat resembling *C. cibarius* in colour and general appearance, but a slenderer plant. Poisonous. A., Q.

C. carbonarius, *Alb. & Schw.*
Burnt ground. Q.

C. infundibuliformis, *Fries.*
Among grass. A.

C. muscigenus, *Bull.*
On mosses (*Hypnum*). A.

C. lobatus, *Fries.*
On mosses. A.

Nyctalis, *Fries.*

N. asterophora, *Fries.*
On dead fungi (*Russula nigricans*). Q.

Marasmius, *Fries.*

M. urens, *Fries.*
Among grass. A.

M. peronatus, *Bolton.*
Among grass. A very common fungus under trees; the stem is shaggy with yellowish down. Taste very pungent; poisonous. A., Q.

M. oreades, *Fries.*
Among grass in open places. Popularly known as the "Champignon"; grows in open pastures and often forms "fairy rings." Esteemed as an article of food, or rather as a seasoning in France and Italy. A., P., Q.

M. prasiosmus, *Fries.*
Among dead leaves under trees. Q.

M. erythropus, *Pers.*
On stumps. Q.

Marasmius—*cont.*

M. archyropus, *Fries.*
Among leaves. A.

M. ramealis, *Bull.*
On dead bramble stems. Q.

M. alliaceus, *Jacq.*
Among dead leaves. A.

M. Rotula, *Scop.*
On dead twigs lying on the ground. A., Q.

M. androsaceus, *L.*
On dead branches. A.

M. insititius, *Fries.*
On dead twigs. A., P.

M. Hudsoni, *Pers.*
On dead holly leaves. A.

M. epiphyllus, *Fries.*
On dead leaves. A., Q.

Lentinus, *Fries.*

L. tigrinus, *Fries.*
On dead wood. A.

L. lepideus, *Fries.*
On dead wood. A., Q.

L. cochleatus, *Fries.*
On stumps. Has a very agreeable, spicy smell, and is edible. Q.

Panus, *Fries.*

P. stypticus, *Fries.*
On dead logs. A.

Lenzites, *Fries.*

L. betulina, *L.*
On stumps. A.

L. abietina, *Fries.*
On fir rails. Q.

Hiatula, *Fries.*

H. Wynniae, *Berk. & Broome.*
On soil in a stove. Phosphorescent in the dark, emitting a pale greenish light. A native of Ceylon. (*Ann. Mag. Nat. Hist.*, 1879, p. 206; *Illustr. Brit. Fung.*, pl. 688.)

Volvaria, *Fries.*

V. bombycina, *Schaeff.*
On living elm trees. A very beautiful fungus, sometimes growing to a large size. A specimen of this fungus growing on a living elm in the grounds, weighed $2\frac{3}{4}$ pounds; diameter of cap when expanded, 14 inches; stem 8 inches long by 2 inches thick; gills $1\frac{1}{2}$ inches broad. A figure along with the specimen is in the Herbarium. A.

V. gloiocephala, *Fries.*
On the ground. Poisonous. A.

V. temperata, *Berk. & Broome.*
On soil in a hot-house.

V. speciosa, *Fries.*
On the ground. Poisonous. A.

Pluteus, *Fries.*

P. cervinus, *Schaeff.*
On stumps and logs. A.

P. nanus, *Pers.*
On stumps and on the ground. A., Q.

Entoloma, *Fries.*

E. sinuatum, *Fries.*
On the ground under trees. Poisonous. Q.

E. jubatum, *Fries.*
On the ground among grass. Q.

E. sericellum, *Fries.*
On the ground among grass. Q.

E. clypeatum, *L.*
On the ground under trees. A., P.

E. rhodopolium, *Fries.*
On the ground. A.

E. costatum, *Fries.*
On the ground among grass. A.

E. sericeum, *Bull.*
In grassy places. A.

E. nidorosum, *Fries.*
On the ground under trees. A., Q.

Clitopilus, *Fries.*

C. prunulus, *Scop.*
Under trees. A.

C. cancrinus, *Fries.*
On the ground. A.

C. carneo-albus, *Wither.*
Among grass. A.

Leptonia, *Fries.*

L. lampropoda, *Fries.*
Among short grass. A.

L. anatina, *Lasch.*
Among short grass. A.

L. serrulata, *Pers.*
Among grass. A., P.

L. chalybea, *Pers.*
On stumps. Q.

L. chloropolia, *Fries.*
Among short grass. A.

Nolanea, *Fries.*

N. pascua, *Pers.*
Among short grass. A., P.

N. mammosa, *Fries.*
Among grass. A.

Eccilia, *Fries.*

E. Acus, *W. G. Smith.*
On pine leaves. A.

E. rhodocylix, *Lasch.*
On the ground. A.

Claudopus, *W. G. Smith.*

C. variabilis, *Pers.*
On twigs. A.

C. depluens, *Batsch.*
On wood. A., Q.

C. byssisedus, *Pers.*
On wood. A., Q.

Pholiota erebia, *Fries.*
On the ground under cedars. P.

P. togularis, *Bull.*
On the ground. A.

P. dura, *Bolton.*
On the ground. Q.

P. praecox, *Pers.*
Among grass. A., P.

Pholiota—*cont.*

P. radicosa, *Bull.*
On the ground near trunks. Q.

P. Aegerita, *Fries.*
On trunks. Q.

P. squarrosa, *Müll.*
On stumps. A.

P. spectabilis, *Fries.*
On trunks. Q.

P. adiposa, *Fries.*
On trunks. Q.

P. mutabilis, *Schaeff.*
On logs. A.

P. marginata, *Batsch.*
On fallen pine leaves. A.

Inocybe, *Fries.*

I. pyriodora, *Pers.*
On the ground under trees. A., Q.

I. incarnata, *Bres.*
Among grass under trees. Q.

I. scaber, *Müll.*
On the ground. A.

I. fasciata, *Cke. & Mass.*
A species remarkable in the genus *Inocybe* for growing in dense tufts. (*Grev.* xvii., 52; *Illustr. Brit. Fungi*, pl. 1173.) A.

I. Bongardii, *Weinm.*
Among short grass. A.

I. echinata, *Roth.*
On soil in the Temperate House.

I. asterospora, *Quélet.*
On the ground under trees. A.

I. perbrevis, *Weimn.*
Among short grass. A.

I. scabella, *Fries.*
On the ground under trees. Varying in colour from pure white to a beautiful pale lilac. A., Q.

I. geophylla, *Sow.*
On the ground under trees. A form with a pale bluish-grey pileus is not uncommon; sometimes white. A., P.

**Hebeloma**, *Fries.*

**H. fastibile**, *Fries.*
On the ground under trees. Smell strong and unpleasant; poisonous. A.

**H. firmum**, *Fries.*
On the ground under *Pinus sylvestris*. A.

**H. claviceps**, *Fries.*
On the ground. A.

**H. mesophaeum**, *Fries.*
Under fir trees. A.

**H. sinapizans**, *Fries.*
On the ground near stumps. A., Q.

**H. crustuliniforme**, *Bull.*
On the ground. Smell strong and unpleasant; poisonous. A.

**H. longicaudum**, *Pers.*
Under trees. Q.

**Flammula**, *Fries.*

**F. purpurata**, *Cke. & Mass.*
On tree-fern stems; in the Fern House. (*Grev.* xviii., 73; *Illustr. Brit. Fungi*, pl. 964.) (*See* plate.)

**F. gymnopodia**, *Bull.*
On the ground. A.

**F. lenta**, *Pers.*
On the ground under trees. Q.

**F. spumosa**, *Fries.*
On buried wood. A.

**F. carbonaria**, *Fries.*
On burnt ground. A.

**F. flavida**, *Schaeff.*
On wood. A., Q., P.

**F. inopoda**, *Fries.*
On rotten trunks. This fungus will probably prove to be a species of *Hypholoma*. A.

**F. sapinea**, *Fries.*
Under pines. A.

**Naucoria**, *Fries.*

**N. hamadrya**, *Fries.*
Among grass. A.

**Naucoria**—*cont.*

**N. ceratodes**, *Fries.*
Among grass. A.

**N. melinoides**, *Fries.*
Among short grass. A., Q.

**N. striaepes**, *Cke.*
Among grass. P.
This remarkably fine species of *Naucoria* was first observed on a lawn near the Herbarium in 1885, and has been noted in the same locality every year since that time. It has also been collected in Yorkshire. (*Grev.* xiii., 60; *Illustr. Brit. Fungi*, pl. 478.)

**N. pediades**, *Fries.*
Among short grass. A., P.

**N. tabacina**, *D.C.*
On naked ground. A.

**N. temulenta**, *Fries.*
Among moss and grass. A.

**Galera**, *Fries.*

**G. tenera**, *Schaeff.*
Among grass. A., Q.

**G. Hypnorum**, *Batsch.*
Among grass, common everywhere.
Var. **Bryorum**, *Pers.*
Among moss and grass. A.

**Tubaria**, *Fries.*

**T. furfuracea**, *Pers.*
On twigs and chips. A.

**T. crobula**, *Fries.*
On fallen branches. A.

**Crepidotus**, *Fries.*

**C. mollis**, *Schaeff.*
On decaying trunks. Q.

**Chitonia**, *Fries.*

**C. rubriceps**, *Cke. & Mass.*
On soil in the Aroid House. A very remarkable fungus, the first European representative of the genus. In all probability imported with soil or plants from the Southern

Chitonia—*cont.*

Hemisphere. (*Grev.* xv., 57; *Illustr. Brit. Fungi*, pl. 967.) (*See* plate.)

Bolbitius, *Fries.*

B. tener, *Berk.*
Among grass. A.

Cortinarius, *Fries.*

C. glaucopus, *Fries.*
On the ground under trees. Q.

C. coerulescens, *Fries.*
Under trees. A.

C. purpurascens, *Fries.*
Among grass under trees. Q.

C. mucifluus, *Fries.*
Under trees. A.

C. ochroleucus, *Schaeff.*
Among grass. The most abundant species of this large genus, which is but sparsely represented in the grounds. A.

C. cinnamomeus, *Fries.*
Under trees. Q.

C. torvus, *Fries.*
Among grass under trees. There is some difference of opinion in different European countries as to this species; but specimens from Kew were submitted to Fries, who stated that they exactly represented his idea of the species. Q.

C. hinnuleus, *Fries.*
Under trees. A.

C. leucopus, *Bull.*
Among grass. A small form of this species having the pileus about 1·5 cm. across is not uncommon. A.

C. castaneus, *Fries.*
On the ground. A single specimen, so far as I am aware, has only been collected. A.

Paxillus, *Fries.*

P. orcelloides, *Cke. & Mass.*
On the ground among grass. (*Grev.* xvi., 46; *Illustr. Brit. Fungi*, pl. 874.) Q.

Paxillus—*cont.*

P. involutus, *Batsch.*
On the ground; common everywhere. Edible.

P. leptopus, *Fries.*
On rotten wood. Q.

Agaricus, *L.*

A. campestris, *L.*
Among grass. This is usually considered as the most delicious of all edible fungi, and is generally spoken of as the meadow mushroom. Although supposed to be the only species sold, it is in reality rare in the market as a cultivated species. A.

A. augustus, *Fries.*
Naked soil. This beautiful species occurred in abundance one season. It is larger and the flavour much superior to that of the common mushroom. A.

A. arvensis, *Schaeff.*
Among grass. It is to be found every season under elm trees. Edible, and by some considered superior to the mushroom. Popularly known as the Horse mushroom. P.

A. comptulus, *Fries.*
Among grass. A.

A. sagatus, *Fries.*
Under trees. A.

Stropharia, *Fries.*

S. Coronilla, *Bull.*
Among grass. A neat little fungus, superficially closely resembling *Agaricus comptulus*, but distinguished by the gills being attached to the stem. Poisonous. A., P.

S. squamosa, *Fries.*
On heaps of leaves and decaying vegetable matter in damp places. A.

S. thrausta, *Kalchb.*
On decaying vegetable matter, and on the ground in damp places. A., Q.

Stropharia—*cont.*

**S. merdaria**, *Fries.*
On dung. A.

**S. stercoraria**, *Fries.*
On dung. A., P.

**S. aeruginosa**, *Curtis.*
Among grass. Common. Poisonous.

**S. semiglobata**, *Batsch.*
On dung. Poisonous. A., P.

Hypholoma, *Fries.*

**H. sublateritium**, *Fries.*
On stumps. Poisonous. A., Q.

Var. **squamosum**, *Cke.*
On stumps. A.

**H. epixanthum**, *Fries.*
On stumps. Q.

**H. fasciculare**, *Hudson.*
On and around stumps. Common. Poisonous.

Var. **eleodes**, *Fries.*
On stumps. A.

**H. velutinum**, *Pers.*
On the ground near decaying wood. A., Q.

**H. pyrotrichum**, *Holms.*
On the ground. A.

**H. candolleanum**, *Fries.*
On stumps and buried wood. A., B., Q.

**H. appendiculatum**, *Bull.*
On rotten wood. Common.

**H. catarium**, *Fries.*
On the ground. A.

**H. capnoides**, *Fries.*
On the ground near stumps. Q.

**H. hydrophilum**, *Bull.*
On the ground. A.

Psilocybe, *Fries.*

**P. semilanceata**, *Fries.*
Among short grass. Common. Poisonous.

Var. **coerulescens**, *Cke.*
Among grass. A. Differs from the typical form only in being blue or greenish at the base of the stem.

Psilocybe—*cont.*

**P. spadicea**, *Schaeff.*
On the naked ground. A.

**P. foenisecii**, *Pers.*
Among grass. Common.

Psathyra, *Fries.*

**P. corrugis**, *Pers.*
On naked soil. A.

**P. semivestita**, *Berk. & Broome.*
Among grass. It is only during the young state that the pileus is covered with white, floccose down; when fully developed it is usually quite naked. A.

Panaeolus, *Fries.*

**P. egregius**, *Mass.*
Among grass. A.

**P. fimiputris**, *Bull.*
On dung. A., P.

**P. retirugis**, *Batsch.*
On dung. A.

**P. campanulatus**, *L.*
Among grass. Common.

**P. papilionaceus**, *Bull.*
Among grass. Common.

Anellaria, *Karsten.*

**A. separata**, *Karsten.*
On dung. A., P.

**A. fimiputris**, *Karsten.*
On dung. Common.

Psathyrella, *Fries.*

**P. gracilis**, *Fries.*
On naked ground under hedges, &c. A.

**P. hiascens**, *Fries.*
On the ground under trees. A.

**P. atomata**, *Fries.*
On the ground under hedges, &c. Common.

**P. disseminata**, *Fries.*
On decaying trunks and stumps. A., Q.

**Coprinus**, *Fries.*

**C. comatus**, *Fries.*
On rich soil and on heaps of decayed leaves. A very elegant fungus when well developed, some specimens attaining a height of 14 inches. One of the best and safest of edible fungi. A figure of this species is exhibited in No. 2 Museum. A., Q.

**C. sterquilinus**, *Fries.*
On dung and rich soil. A., P.

**C. atramentarius**, *Fries.*
On the ground near decaying wood. Common. Edible, but not equal in flavour to *Coprinus comatus*.

**C. soboliferus**, *Fries.*
On the ground. Probably only a variety of *C. atramentarius*. Edible. P.

**C. fimetarius**, *Fries.*
On manure heaps, &c. Common.

**C. niveus**, *Fries.*
On dung. Common.

**C. micaceus**, *Fries.*
On the ground near stumps, posts, &c. Growing in dense clusters; the pileus when young is thickly dusted with glittering particles resembling fragments of mica.

**Coprinus**—*cont.*

**C. deliquescens**, *Bull.*
On trunks, heaps of decaying leaves, &c. Common.

**C. tardus**, *Karsten.*
On the ground near buried wood. A.

**C. tuberosus**, *Quélet.*
On dung. An interesting little species, springing from a small black sclerotium. The sclerotia were found by Mr. G. Nicholson, the Curator of the Gardens; the sporophores appeared a week after the sclerotia were placed in damp earth. This is the first British record for this species, which was established by Quélet from French specimens (*Bull. Soc. Bot. France*, xxiv., 289, pl. 3, 1877). B.

**C. Hendersoni**, *Berk.*
On soil in hot beds.

**C. Lagopus**, *Fries.*
On rich soil. A., P.

**C. radiatus**, *Fries.*
On dung. Common. A very minute and delicate fungus lasting only for a few hours; only about 2 lines across.

**C. stercorarius**, *Fries.*
On dung, rich soil, &c. Common.

**C. ephemerus**, *Fries.*
On manure heaps, &c. Common.

## Polyporeæ.

**Boletus**, *Dill.*

**B. luteus**, *L.*
Under pines. A.

**B. elegans**, *Schum.*
Under pines. A.

**B. flavus**, *With.*
On the ground under trees. A.

**B. chrysenteron**, *Fries.*
On the ground. The most abundant species in the grounds. Very handsome, with its olive cap and bright lemon-yellow under surface. Poisonous.

**Boletus**—*cont.*

**B. subtomentosus**, *L.*
On the ground. Common.

**B. cruentus**, *Vent.*
On the ground under beeches. Smell strong; flesh changing to red when cut or bruised. A.

**B. impolitus**, *Fries.*
Under trees. A.

Boletus—*cont.*

**B. fulvidus**, *Fries.*
Under trees. A.

**B. castaneus**, *Bull.*
Under trees. A rare fungus, readily recognised by the minutely velvety pale chestnut-coloured pileus and stem. A.

**B. spadiceus**, *Schaeff.*
Under trees. A.

**B. radicans**, *Pers.*
Under trees. A.

**B. duriusculus**, *Schulzer.*
On the ground. The flesh turns copper-coloured when cut or bruised. A.

**B. radicans**, *Pers.*
Among grass under trees. A.

**B. badius**, *L.*
Among grass. A., Q.

**B. bovinus**, *L.*
Under pines. A.

**B. granulatus**, *L.*
Under trees. Edible. A.

**B. tenuipes**, *Cke.*
Under beeches. A.

**B. regius**, *Kromb.*
Among grass. A very beautiful fungus with a bun-shaped rose-coloured cap or pileus 4–6 inches across. A.

**B. luridus**, *Schaeff.*
On the ground under trees. A common species in the grounds, readily known by the dark olive-green pileus, and the blood-red under surface and stout stem. The pale yellow flesh instantly changes to a deep indigo-blue colour when broken. Poisonous. A., Q.

**B. edulis**, *Bull.*
On the ground. The cap or pileus resembles a penny bun in shape, size, and colour. Edible. Q.

**B. purpureus**, *Fries.*
Under trees A.

Boletus—*cont.*

**B. rubinus**, *W. G. Smith.*
Under beeches. A.

**B. viscidus**, *L.*
Under trees. Q.

**B. laricinus**, *Berk.*
Under pines. A.

**B. scaber**, *Fries.*
Among grass. Edible. A., Q.

**B. caespitosus**, *Mass.*
Among grass under trees. The only British species of *Boletus* that grows in dense clusters. (*Brit. Fungus-Flora*, i., 297.) A.

Fistulina, *Bull.*

**F. Hepatica**, *Fries.*
On living trunks of old oak trees. When well grown forming large flaps weighing 1 lb. to 2 lbs. each. Texture fibrous and resembling raw beef when cut in slices, hence the popular name beefsteak fungus. Edible. A., B.

Polyporus, *Micheli.*

**P. rufescens**, *Fries.*
On stumps. Q.

**P. squamosus**, *Fries.*
On living trunks of various trees. Common. An elegant fungus, but a destructive parasite.

**P. melanopus**, *Fries.*
On buried wood. A.

**P. picipes**, *Fries.*
On willow trunks. A., Q.

**P. varius**, *Fries.*
On fallen trunks and stumps. A., P.

**P. elegans**, *Fries.*
On birch trunk. Q.
Var. **nummularius**, *Fries.*
On fallen trunks. Q.

**P. giganteus**, *Fries.*
At the base of trunks. The large overlapping pilei often form patches 2–3 feet across. A.

Polyporus—*cont.*

**P. sulphureus**, *Fries.*
On living trunks of various trees. Common. Distinguished by the bright sulphur colour of every part, and the very disagreeable smell. A destructive parasite to trees.

**P. salignus**, *Fries.*
On willow trunks, which are destroyed by it. A.

**P. dryadeus**, *Fries.*
Parasitic on oak trunks, usually growing near the base. A.

**P. hispidus**, *Fries.*
On living trunks of various trees. A very destructive parasite. A., Q.

**P. cuticularis**, *Fries.*
On beech trunk. A parasitic species. A.

**P. mollis**, *Fries.*
On dead pine wood. Q.

**P. Destructor**, *Fries.*
On worked wood, which it destroys.

**P. betulinus**, *Fries.*
Parasitic on birch trunks. Q.

**P. fumosus**, *Fries.*
On stumps. Common.

**P. chioneus**, *Fries.*
On pine trunks. A.

**P. caesius**, *Fries.*
On decayed pine trunk. Q.

**P. armeniacus**, *Berk.*
On stumps and dead wood. Q.

Fomes, *Fries.*

**F. lucidus**, *Fries.*
On decaying trunks. Reddish-chestnut colour; the pileus gives out a viscid secretion which soon hardens, when it presents the appearance of having been varnished. A.

**F. ulmarius**, *Fries.*
On old elm trunks. A.

**F. connatus**, *Fries.*
On old trunks. Q.

Fomes—*cont.*

**F. fomentarius**, *Fries.*
On living trunks of various trees, which it eventually kills if not removed. The substance of this fungus was at one time used for making tinder; at the present day it is manufactured into a felt-like material, which is used for making a great variety of articles, as chest preservers, purses, slippers, caps, &c. A selection of articles manufactured from this material are exhibited in No. 2 Museum. A., P.

**F. nigricans**, *Fries.*
On living birch trunk. A parasitic species. Q.

**F. salicinus**, *Fries.*
On willow trunks. A.

**F. fraxineus**, *Fries.*
On old ash trunks. A.

**F. annosus**, *Fries.*
Base of trunks, stumps, &c. A very destructive fungus, especially to Conifers. Q.

**F. applanatus**, *Fries.*
On dead trunks. Q.

**F. conchatus**, *Fries.*
On willow trunks. A.

**F. ferruginosus**, *Mass.*
On dead trunks, posts, &c. A., Q.

Polystictus, *Fries.*

**P. perennis**, *Fries.*
On the ground under beeches. A.

**P. versicolor**, *Fries.*
On dead trunks, stumps, &c. Common.

**P. hirsutus**, *Fries.*
On trunks, posts, &c. Common.

**P. velutinus**, *Fries.*
On trunks and stumps. Common.

**P. abietinus**, *Fries.*
On decaying fir tree. A.

**Poria**, *Pers.*

**P. vaporaria**, *Fries.*
On fallen branches. Common. Usually a saprophyte, but sometimes becoming parasitic, and destroying Conifers.

**P. Medulla-panis**, *Fries.*
On rotten wood. Q.

**P. blepharistoma**, *Berk. & Broome.*
On dead wood. A., P.

**P. sanguinolenta**, *Alb. & Schw.*
On dead wood. A.

**Trametes**, *Fries.*

**T. gibbosa**, *Fries.*
On stumps. Q.

**T. serpens**, *Fries.*
On fallen bark. Q.

**Daedalea**, *Pers.*

**D. quercina**, *Pers.*
On oak stumps. A.

**D. unicolor**, *Fries.*
On posts. Q.

**Merulius**, *Hall.*

**M. lacrymans**, *Fries.*
On old boards. Popularly known as "dry-rot." Very rare in woods, but too well known for the destruction it causes with worked timber in badly ventilated places. Fine specimens of this fungus are exhibited in No. 2 Museum.

**M. Corium**, *Fries.*
On dead branches. Q.

**M. tremellosus**, *Schrad.*
On dead wood. P.

## Hydneæ.

**Hydnum**, *L.*

**H. Weinmanni**, *Fries.*
On rotten poplar. Q.

**H. alutaceum**, *Fries.*
On rotten wood. A.

**H. viride**, *Fries.*
On rotten wood. A.

**H. niveum**, *Pers.*
On dead wood. A., Q.

**H. farinaceum**, *Pers.*
On rotten pine boards. A.

**Caldesiella**, *Saccardo.*

**C. ferruginosa**, *Saccardo.*
On decaying wood. A.

**Irpex**, *Fries.*

**I. fusco-violaceus**, *Fries.*
On pine trunks. This fungus is said to become parasitic on pines. It is doubtful as to whether this species is more than a form of *Polystictus abietinus* with torn pores. A.

**Radulum**, *Fries.*

**R. quercinum**, *Fries.*
On dead oak branches. A.

**Radulum**—*cont.*

**R. orbiculare**, *Fries.*
On dead bark of various trees. A.

**Phlebia**, *Fries.*

**P. vaga**, *Fries.*
On dead wood. Q.

**P. radiata**, *Fries.*
On dead wood. Q.

**P. merismoides**, *Fries.*
On dead wood. Q.

**Grandinia**, *Fries.*

**G. granulosa**, *Fries.*
On fallen branches. A.

**G. crustosa**, *Fries.*
On dead wood. A.

**Odontia**, *Pers.*

**O. fimbriata**, *Pers.*
On fallen branches. Q.

**Kneiffia**, *Fries.*

**K. setigera**, *Fries.*
On fallen branches. A.

Solenia, *Hoffmann.*

S. fasciculata, *Pers.*
On dead wood. B.

Cyphella, *Fries.*

C. capula, *Fries.*
On dead bramble stem. Q.

C. albo-violacea, *Karsten.*
On dead bark. B.

C. villosa, *Karsten.*
On rotten twigs. A.

Craterellus, *Fries.*

C. cornucopioides, *Pers.*
On the ground. A quaint looking fungus, resembling a black funnel with a wavy margin. Edible, and with an excellent flavour. Q.

Stereum, *Pers.*

S. spadiceum, *Fries.*
On dead branches. Common.

S. rugosum, *Fries.*
On dead branches. Common.

S. sanguinolentum, *Fries.*
On decaying pine plank. The hymenium becomes blood-red when scratched or bruised. A.

S. purpureum, *Pers.*
On dead trunks and branches. Common.

S. ochroleucum, *Fries.*
On dead bark, especially of *Aesculus Hippocastanum*. A.

S. hirsutum, *Fries.*
On dead trunks, branches, &c. Common. Is sometimes a destructive parasite on trees.

Corticium, *Pers.*

C. comedens, *Fries.*
On branches. Common. Developing under the bark, which is eventually thrown off. A parasite.

C. coeruleum, *Fries.*
On old posts. Of a beautiful clear blue colour, and with a silky sheen when well developed. One of the few British Fungi that are phosphorescent, emitting a pale bluish light in the dark. A.

Corticium—*cont.*

C. flaveolum, *Mass.*
On trunk of a tree-fern in the Temperate House. Probably an introduced species.

C. sanguineum, *Fries.*
On fallen branches. Q.

C. polygonium, *Fries.*
On decaying bark. Q.

C. molle, *Fries.*
On pine bark. A.

C. roseolum, *Mass.*
On old worked wood. A.

C. lacunosum, *Berk. & Broome.*
On dead wood. A.

C. Sambuci, *Fries.*
On bark of *Sambucus nigra*. Q.

C. arachnoideum, *Berk.*
On dead wood branches, &c. A., Q.

C. confluens, *Fries.*
On bark of *Fagus sylvatica*. A.

C. lacteum, *Fries.*
On wood. A.

C. Lycii, *Cke.*
On *Lycium*. P.

C. populinum, *Fries.*
On poplar bark. A.

Hymenochaete, *Lév.*

H. rubiginosa, *Lév.*
On decorticated wood. A.

H. leonina, *Berk. & Curt.*
On dead wood. A.

H. corrugata, *Lév.*
On dead wood. A.

Peniophora, *Cke.*

P. quercina, *Cke.*
On oak branches. A.

P. gigantea, *Mass.*
On pine bark. A.

P. pezizoides, *Mass.*
On dead branches of *Aesculus Hippocastanum*. A.

Peniophora—*cont.*

**P. rosea**, *Mass.*
On wood. A.

**P. incarnata**, *Mass.*
On wood and bark. A., P.

**P. ochracea**, *Mass.*
Inside dead bark. Q.

**P. cinerea**, *Cke.*
On bark and wood. Common.

**P. velutina**, *Cke.*
On wood. A., Q.

**P. phyllophila**, *Mass.*
On dead leaves. A.

**P. terrestris**, *Mass.*
Running over branches, leaves, and the naked ground. A.

**Soppittiella**, *Mass.*

**S. cristata**, *Mass.*
On the ground, incrusting leaves, moss, &c. Q.

**S. sebacea**, *Mass.*
Running over various substances lying on the ground. A.

**Thelephora**, *Ehrh.*

**T. caryophyllea**, *Pers.*
On the ground. A.

Thelephora—*cont.*

**T. terrestris**, *Ehrh.*
On the ground under pines. A.

**T. laciniata**, *Pers.*
On the ground under pines. A.

**Coniophora**, *DC.*

**C. olivacea**, *Mass.*
On dead pine trunk. Q.

**C. arida**, *Karsten.*
On dead pine wood. Q.

**C. sulphurea**, *Mass.*
Running over heaps of dead leaves. A

**C. ochracea**, *Mass.*
On the inside of elm bark. Q.

**C. pulverulenta**, *Mass.*
On dead wood. Q.

**C. membranacea**, *DC.*
On damp wall of a potting shed.

**C. incrustans**, *Mass.*
Running over heaps of dead leaves. Q.

**C. puteana**, *Mass.*
On dead bark. A.

## Clavarieæ.

**Clavaria**, *Vaillant.*

**C. muscoides**, *L.*
Among grass. A.

**C. fastigiata**, *L.*
Among grass. A.

**C. kewensis**, *Mass.*
On stump. Smell pleasant, resembling that of aniseed. B. (*See* plate).

**C. coralloides**, *L.*
On the ground under trees. Q.

**C. cinerea**, *Bull.*
On the ground. A.

**C. cristata**, *Holmsk.*
Under trees. Edible. Q.

**C. rugosa**, *Bull.*
Under trees. P., Q.

**C. fusiformis**, *Sow.*
Under trees. Q.

Clavaria—*cont.*

**C. inæqualis**, *Fl. Dan.*
Among grass. A.

**C. argillacea**, *Fries.*
Among grass. A.

**C. vermicularis**, *Scop.*
Among grass. Edible, taste resembling that of cheese-straws. A.

**C. fragilis**, *Holmsk.*
Among grass. A., Q.

**C. uncialis**, *Grev.*
On dead stems of various Umbellifers. Q.

**Typhula**, *Pers.*

**T. erythropus**, *Fries.*
On dead herbaceous stems. Q.

Typhula—*cont.*

T. phacorrhiza, *Fries.*
On dead herbaceous stems. B.

Pistillaria, *Fries.*

P. micans, *Fries.*
On dead thistle stems. Q.

Pistillaria—*cont.*

P. quisquilaris, *Fries.*
On dead herbaceous stems. Q.

DACRYOMYCETEÆ.

Dacryomyces, *Nees.*

D. deliquescens, *Duby.*
On pine rails, &c. Common.

D. stillatus, *Nees.*
On dead, damp wood. Common.

D. chrysocomus, *Fries.*
On soft decayed pine wood. A.

D. succineus, *Fries.*
On fallen pine leaves. A.

Ditiola, *Fries.*

D. radicata, *Fries.*
On rotten wood. A.

Calocera, *Fries.*

C. viscosa, *Fries.*
On oak wood. A., Q.

C. stricta, *Fries.*
On wood. Q.

C. striata, *Fries.*
On trunks. A.

TREMELLINEÆ.

Tremella, *Dill.*

T. lutescens, *Pers.*
On a stump. A.

T. mesenterica, *Retz.*
On dead branches. Common.

T. frondosa, *Fries.*
On fallen trunk. Q.

T. Tubercularia, *Berk.*
On fallen oak branches. A.

Exidia, *Fries.*

E. glandulosa, *Fries.*
On dead oak branches. A peculiar looking, black, gelatinous fungus, popularly known as "witches' butter." A.

Ulocolla, *Bref.*

U. saccharina, *Bref.*
On dead pine wood. A.

U. foliacea, *Bref.*
On stumps. Q.

AURICULARIEÆ.

Auricularia, *Bull.*

A. mesenterica, *Fries.*
On dead trunks. Common.

A. lobata, *Sommerf.*
On trunk. A.

Hirneola, *Fries.*

H. Auricula-judæ, *Berk.*
On dead branches of *Sambucus nigra*. Q.

## Gastromycetes.

PHALLOIDEÆ.

Aseröe, *La Bill.*

A. rubra, *La Bill.*
On soil in a stove. A very beautiful fungus, resembling a stalked sea-anemone. The stem is pure white and the

Aseröe—*cont.*

spreading rays bright crimson. As is usual in the members of the present family, the very minute spores are immersed in mucus, which

**Aseröe**—*cont.*

has a sweet taste and a very disagreeable smell. Numerous flies are attracted by the smell, and readily eat the mucus, and by this means the spores are dispersed. An introduced species; a native of Queensland. (*See* plate.)

**Phallus**, *Micheli.*

**P. impudicus**, *L.*
On the ground. Readily detected by the smell, which is very offensive and observable at a distance. A., Q.

**Mutinus**, *Fries.*

**M. caninus**, *Fries.*
On the ground. Smell only slight. A., Q.

**Lycoperdon**, *Tournefort.*

**L. echinatum**, *Pers.*
On the ground. A.

**L. atropurpureum**, *Vitt.*
Under trees. Q.

**L. saccatum**, *Vahl.*
Among grass under trees. Common.

**Lycoperdon**—*cont.*

**L. gemmatum**, *Batsch.*
Among grass under trees. Common.

**L. pyriforme**, *Schæff.*
On rotten wood. Common.

**L. coelatum**, *Bull.*
Among grass. A., P.

**L. Bovista**, *L.*
Among grass. The largest British puff-ball, sometimes reaching a diameter of 12 inches. Edible, having a very delicate flavour. A.

**Bovista**, *Dill.*

**B. plumbea**, *Berk.*
Among grass. Common.

**B. nigrescens**, *Vitt.*
Among grass. Common.

**B. pusilla**, *Mass.*
Among grass. A.

**B. ovalispora**, *Cke. & Mass.*
Among grass. A.

## Sclerodermeæ.

**Scleroderma**, *Pers.*

**S. vulgare**, *Fries.*
On the ground under trees. Common.

**S. verrucosum**, *Pers.*
On the ground. Common.

**S. Bovista**, *Fries.*
On the ground. A., Q.

**Scleroderma**—*cont.*

**S. Geaster**, *Fries.*
On the ground. The species of *Scleroderma* are often mistaken for truffles, but are quite distinct, and are not edible. The Tuberaceæ or truffle family are absent from the grounds. A., Q.

## Nidularieæ.

**Cyathus**, *Haller.*

**C. striatus**, *Hoffm.*
On twigs and wood on the ground. Common. This species, along with the next, are popularly known as the "birds'-nest fungus."

**C. vernicosus**, *DC.*
On the ground. Common.

**Crucibulum**, *Tul.*

**C. vulgare**, *Tul.*
On wood and twigs. A.

**Nidularia**, *Tul.*

**N. pisiformis**, *Tul.*
On wood. A.

Sphaerobolus, *Tode.*

S. stellatus, *Tode.*

On damp wood in a plant house. A minute but very beautiful fungus, at first ball-shaped, then splitting above into several teeth, and ejecting to some distance a little yellow ball containing the spores.

Thelebolus, *Tode.*

T. terrestris, *Alb. & Schw.*

On heaps of dead leaves. A.

## ASCOMYCETES.

### Pyrenomycetes.

ERYSIPHEÆ.

All the species belonging to this family are parasites, and in some instances very destructive to cultivated crops. They appear under the form of a delicate white film on living leaves.

Podosphaera, *Kunze.*

P. Oxyacanthae, *De Bary.*

On living leaves of *Crataegus.* Common.

P. tridactyla, *De Bary.*

On living leaves of various species of *Prunus.* Common.

Sphaerotheca, *Lév.*

S. pannosa, *Lév.*

On leaves, young shoots, flowers, and fruit of cultivated roses. A dangerous enemy to roses, causing the foliage to drop prematurely.

S. Castagnei, *Lév.*

On living leaves of various cucurbitaceous plants. When abundantly developed, the leaves present the appearance of having received a coat of whitewash.

Phyllactinia, *Lév.*

P. suffulta, *Saccardo.*

On leaves of *Lonicera, Betula alba, Cornus sanguinea.*

Uncinula, *Lév.*

U. Bivonae, *Lév.*

On living leaves of *Ulmus campestris.*

U. adunca, *Lév.*

On leaves of *Populus nigra.*

Uncinula—*cont.*

U. Prunastri, *Saccardo.*

On leaves of *Prunus spinosa.*

U. Aceris, *Saccardo.*

On living leaves of *Acer Pseudoplatanus.*

Microsphaera, *Lév.*

M. Dubyi, *Lév.*

On living leaves of *Lonicera Caprifolium.*

M. Berberidis, *Lév.*

On living leaves of *Berberis vulgaris.*

M. penicillata, *Lév.*

On living leaves of *Lonicera sempervirens* and *Betula pubescens.*

Erysiphe, *Hedwig.*

E. lamprocarpa, *Lév.*

On living leaves of *Aster grandiflorus, Centaurea nigrescens, Cousinia uncinata,* and many other composites.

E. Umbelliferarum, *De Bary.*

On living leaves of many umbelliferous plants. Common.

E. communis, *Fries.*

On living leaves of various plants. Common.

PERISPORIEÆ.

**Eurotium**, *Link.*

**E. Herbariorum**, *Link.*
On decaying plants. Common.

**E. lateritium**, *Mont.*
On damp, decaying plants.

**Perisporium**, *Fries.*

**P. vulgare**, *Corda.*
On rotting sacking.

CAPNODIEÆ.

**Capnodium**, *Mont.*

**C. Salicinum**, *Mont.*
On living branches and leaves of *Salix viminalis* and *S. Caprea.*

**C. Tiliae**, *Saccardo.*
On living leaves of *Tilia parvifolia.*

**Antennaria**, *Link.*

**A. laevigata**, *Corda.*
On bark of *Betula alba.*

HYPOCREÆ.

**Claviceps**, *Tul.*

**C. purpurea**, *Tul.*
Parasitic in the ovary of *Lolium perenne* and other grasses. The black, hornlike stroma of the fungus is known by the name of Ergot, and is used medicinally.

**Cordyceps**, *Fries.*

**C. militaris**, *Link.*
On the larva of some insect. A.

**Epichloe**, *Fries.*

**E. typhina**, *Pers.*
Parasitic on the living stems of *Holcus lanatus* and *H. mollis.*

**Hypocrea**, *Fries.*

**H. rufa**, *Pers.*
On dead wood.

**Polystigma**, *Pers.*

**P. rubrum**, *Pers.*
On living leaves of various species of *Prunus.*

**Nectria**, *Fries.*

**N. cinnabarina**, *Tode.*
On dead branches. A true and very destructive parasite, attacking trees and shrubs, the branches of which become thickly studded with coral-coloured tubercles one to two lines in diameter.

**Nectria**—*cont.*

**N. Aquifolii**, *Fries.*
On dead holly bark. A., B.

**N. Lamyi**, *Desm.*
On dead wood.

**N. mammoidea**, *Plow.*
On dead hawthorn.

**N. Ribis**, *Tode.*
On dead branches of *Ribes aureum.* Parasitic on various species of *Ribes.*

**Hypomyces**, *Fries.*

**H. chrysospermus**, *Tul.*
On various species of *Boletus* and *Agaricus.*

**H. rosellus**, *Alb. & Schw.*
On *Corticium*, *Stereum*, and *Poria.*

**H. lateritius**, *Fries.*
On *Poria vaporaria.*

**Lasionectria**, *Saccardo.*

**L. rousselliana**, *Mont.*
On dead wood.

**Gibberella**, *Saccardo.*

**G. cyanogena**, *Desm.*
On bark of *Sambucus nigra.*

**Acrospermum**, *Tode.*

**A. compressum**, *Tode.*
On dead herbaceous stems.

### Xylarieæ.

Xylaria, *Hill.*

X. polymorpha, *Grev.*
On decaying logs.

X. digitata, *Fries.*
On dead wood.

X. vaporaria, *Berk.*
In soil in frames.

X. carpophila, *Fries.*
On fallen beech mast.

X. Hypoxylon, *Fries.*
On dead wood.

Nummularia, *Tul.*

N. Bulliardi, *Tul.*
On dead wood.

Hypoxylon, *Fries.*

H. coccineum, *Bull.*
On dead hazel.

H. fuscum, *Pers.*
On dead wood.

### Dothideæ.

Phyllachora, *Fuckel.*

P. Ulmi, *Duv.*
On living leaves of *Ulmus.*

P. Trifolii, *Pers.*
On living leaves of *Trifolium medium.*

P. graminis, *Pers.*
On living leaves of various grasses.

Rhopographus, *Nitzke.*

R. filicinus, *Fries.*
On living fronds of *Pteris aquilina.*

Rhytisma, *Fries.*

R. acerinum, *Pers.*
On living leaves of *Acer campestre* and *A. Pseudoplatanus.* The large black blotches so common on sycamore leaves are caused by this fungus, which does considerable injury, causing the leaves to fall early in the season, consequently the wood is not properly matured, and the stock of accumulated food insufficient for the following year's growth. The fungus remains on the fallen leaves during the winter, and matures its fruit in the spring when the young sycamore leaves are inoculated. The disease can be arrested if the diseased leaves are collected and burned soon after they fall.

Rhytisma—*cont.*

R. salicinum, *Fries.*
On living leaves of *Salix Caprea* and *S. viminalis.*

### Stigmateæ.

Stigmatea, *Fries.*

S. Robertiani, *Fries.*
On living leaves of *Geranium robertianum.*

Stigmatea—*cont.*

S. Ægopodii, *Fries.*
On living leaves of *Aegopodium.*

### Diatrypeæ.

Diatrype, *Fries.*

D. Brassicae, *Cke.*
On dead cabbage stalks.

D. verruciformis, *Ehr.*
On dead branches of *Fagus sylvatica.*

Diatrype—*cont.*

D. quercina, *Fries.*
On dead branches of *Quercus.*

D. Stigma, *Hoffm.*
On dead wood.

## Valseæ.

Valsa, *Fries.*

**V. leucostoma,** *Pers.*
On branches of *Prunus.*

**V. stellulata,** *Fries.*
On branches of *Ulmus campestris.*

**V. Ailanthi,** *Saccardo.*
On bark of *Ailanthus glandulosus.*

**V. ceratophora,** *Tul.*
On branches of *Ulmus montana.*

**V. dissepta,** *Fries.*
On branches of *Ulmus campestris.*

**V. Betulae,** *Tul.*
On bark of *Betula alba.*

**V. Hippocastani,** *Cke.*
On branches of *Aesculus Hippocastanum.*

**V. taleola,** *Fries.*
On bark of *Quercus.*

**V. oncostoma,** *Duby.*
On twigs of *Robinia Pseudocacia.*

Valsa—*cont.*

**V. robergeana,** *Desm.*
On dead fallen branches.

**V. syngenesia,** *Fries.*
On branches of *Sambucus nigra.*

**V. platanoides,** *Pers.*
On branches of *Acer Pseudoplatanus.*

**V. nivea,** *Fries.*
On dead branches of *Crataegus.*

Melanconis, *Tul.*

**M. stilbostoma,** *Fries.*
On bark of *Betula alba.*

Pseudovalsa, *De Not.*

**P. umbonata,** *Tul.*
On dead wood.

**P. hapalocystis,** *Berk. & Broome.*
On dead twigs of *Platanus acerifolia.*

Fenestella, *Tul.*

**F. Salicis,** *Rehm.*
On branches of *Salix.*

## Eutypæ.

Eutypa, *Tul.*

**E. Acharii,** *Tul.*
On dead wood.

**E. aspera,** *Nitschke.*
On wood.

**E. lata,** *Pers.*
On trunks.

**E. flavo-virens,** *Tul.*
On hard wood.

Diaporthe, *Nitschke.*

**D. pulla,** *Nitschke.*
On wood.

**D. incarcerata,** *Berk. & Broome.*
On branches of *Rosa canina.*

**D. resecans,** *Nitschke.*
On branches of *Syringa vulgaris.*

Diaporthe—*cont.*

**D. rostellata,** *Fries.*
On stems of *Rubus fruticosus.*

**D. Phillyreae,** *Cke.*
On branches of *Phillyrea.*

**D. circumscripta,** *Otth.*
On dry branches.

**D. Ryckholtii,** *West.*
On trunk and branches of *Symphoricarpus racemosus.*

**D. Epilobii,** *Cke.*
On stem of *Epilobium montanum.*

**D. Lirella,** *M. & N.*
On stem of *Spiraea Ulmaria.*

Nitschkia, *Otth.*

**N. cupularis,** *Pers.*
On dry branches of *Tilia vulgaris* and *Robinia Pseudacacia.*

### Cucurbitarieæ.

**Cucurbitaria**, *Gray.*

**C. Berberidis**, *Pers.*
On branches of *Berberis vulgaris.*

**C. Aspegrenii**, *Ces.*
On rotten wood.

**Cucurbitaria**—*cont.*

**C. Laburni**, *Pers.*
On branches of *Laburnum vulgare* and *L. alpinum.*

### Byssosphaerieæ.

**Byssosphaeria**, *Cke.*

**B. innumera**, *Berk. & Broome.*
On dead wood.

**B. Aquila**, *Fries.*
On dead wood.

**Lasiosphaeria**, *Saccardo.*

**L. sulphurella**, *Saccardo.*
On fallen branches.

**L. ovina**, *Pers.*
On dead wood.

**Venturia**, *Not.*

**V. Alchemillae**, *Grev.*
Parasitic on living leaves of *Alchemilla vulgaris.*

**Chaetomium**, *Kunze*

**C. elatum**, *Kunze.*
On damp straw.

**Psilosphaeria**, *Saccardo.*

**P. pulviscula**, *Currey.*
On dead wood.

**P. spermoides**, *Fries.*
On dead wood.

**P. pustula**, *Currey.*
On dead wood.

**Melanomma**, *Saccardo.*

**M. Pulvis-pyrius**, *Saccardo*
On rotten wood, stumps, &c. The perithecia are very minute, and densely crowded, often covering a surface of many square inches, and resembling grains of gunpowder, hence the specific name.

### Sordarieæ.

**Sordaria**, *Saccardo.*

**S. fimicola**, *Roberge.*
On dung.

### Cryptosphaerieæ.

**Cryptosphaeria**, *Grev.*

**C. millepunctata**, *Grev.*
On dead branches.

**Physalospora**, *Saccardo.*

**P. rosicola**, *Fckl.*
On branches of cultivated roses.

**Endophlaea**, *Fries.*

**E. salicella**, *Fries.*
On branches of *Salix vitellina, S. alba, and S. capraea.*

**E. sphingiophora**, *Oudem.*
On branches of *Cornus alba.*

**Leptosphaeria**, *Saccardo.*

**L. vagabunda**, *Saccardo.*
On branches of *Hypericum calycinum & Kerria japonica.*

**Metasphaeria**, *Saccardo.*

**M. complanata**, *Tode.*
On dead herbaceous stems.

**Raphidospora**, *Saccardo.*

**R. rubella**, *Pers.*
On various kinds of dead herbaceous stems. The presence of the minute parasite is indicated by a red stain on the matrix.

**Raphidospora**—*cont.*

**R. acuminata**, *Sow.*
On dead herbaceous stems.

**Heptameria**, *Saccardo.*

**H. arundinacea**, *Sow.*
On culms of *Arundo Donax.*

**H. Doliolum**, *Pers.*
On dead herbaceous stems.

**H. acuta**, *Mont.*
On dead herbaceous stems of various plants.

**H. Typharum**, *Desm.*
On leaves of *Typha angustifolia.*

**H. Rusci**, *Wallr.*
On branches and phyllodes of *Ruscus.*

**Pleospora**, *Saccardo.*

**P. Bardanae**, *Nsl.*
On dead stems of *Arctium.*

**P. Meliloti**, *Rab.*
On dead stems of *Melilotus officinalis.*

**P. denotata**, *Cke. & Ellis.*
On dead herbaceous stems.

**Pleospora**—*cont.*

**P. Herbarum**, *Pers.*
On decaying stems of most herbaceous Dicotyledons.

**Laestadia**, *Saccardo.*

**L. veneta**, *Sacc. & Speg.*
On fallen leaves of *Platanus acerifolia.*

**L. Rhodorae**, *Cke.*
On dead herbaceous stems.

**L. Iridis**, *Cke.*
On dead leaves of *Iris Pseudacorus.*

**Sphaerella**, *Pers.*

**S. hedericola**, *Desm.*
On dead ivy leaves.

**S. maculaeformis**, *Pers.*
On fallen leaves of *Castanea sativa.*

**S. Brassicicola**, *Ces.*
On dead leaves and fruit of *Brassica oleracea.*

**S. isariophora**, *Desm.*
On leaves of *Stellaria nemorum & Stellaria media.*

## Discomycetes.

### Helvelleæ.

**Morchella**, *Dill.*

**M. crassipes**, *Pers.*
Among grass under trees. A very fine species, sometimes reaching a height of 10–14 inches. Edible. First detected at Kew by Mrs. Thiselton-Dyer. A., P.

**M. esculenta**, *Pers.*
Among grass in spring. Edible. A.

**M. conica**, *Pers.*
Among grass in spring. Edible. A.

**M. smithiana**, *Cke.*
Among grass. A very large showy fungus appearing in the spring. Edible. A.

**Mitrophora**, *Lév.*

**M. Gigas**, *Lév.*
Among grass in the spring. A., Q.

**M. semilibera**, *Lév.*
On naked soil under a hedge. In the spring. A.

**Helvella**, *Fries.*

**H. crispa**, *Fries.*
Among grass under trees in spring. Edible. A., Q.

**H. lacunosa**, *Afz.*
Among grass appearing in spring. A.

**H. elastica**, *Bull.*
Among grass in spring. A., Q.

Mitrula, *Fries.*

M. phalloides, *Chev.*
On masses of floating dead leaves in the lake.

M. cucullata, *Fries.*
On decaying pine leaves. A.

M. olivacea, *Saccardo.*
Among short grass. A.

Leotia, *Hill.*

L. lubrica, *Pers.*
Under trees. Q.

L. acicularis, *Pers.*
On decaying stumps. A.

Vibrissea, *Fries.*

V. Guernisaci, *Crouan.*
On decayed willow twigs floating in the lake.

Geoglossum, *Pers.*

G. glutinosum, *Pers.*
Among grass. A.

G. glabrum, *Pers.*
Among grass. A.

G. hirsutum, *Pers.*
Among grass. A., P.

PEZIZEÆ.

Acetabula, *Fckl.*

A. vulgaris, *Fckl.*
On the ground. A very beautiful fungus of a brownish colour, resembling a carved font in miniature. A.

Otidea, *Pers.*

O. onotica, *Fckl.*
On the ground under trees. A.

O. aurantia, *Mass.*
On the ground. A large, showy fungus, cup-shaped and usually much waved and crisped, of a clear, deep orange colour. A., Q.

Peziza, *Dill.*

P. saniosa, *Schrad.*
On the ground. A quantity of violet liquid escapes when the plant is wounded. A.

P. vesiculosa, *Bull.*
On manure heaps, rich soil, &c. Common.

P. ampliata, *Pers.*
On dead bark. Q.

P. ochracea, *Boud.*
On the ground under beeches. A.

P. badia, *Pers.*
On the ground. A.

P. bufonia, *Pers.*
On a rubbish heap. Q.

Geopyxis, *Pers.*

G. carbonaria, *Saccardo.*
On burnt ground. A.

G. coccinea, *Mass.*
On fallen branches. This fungus appears to be somewhat rare in the south of England; in the north it is a very common species, and is collected along with moss for decorative purposes. It appears during the winter and early spring. Q.

G. cupularis, *Saccardo.*
Damp ground. Q.

Humaria, *Fries.*

H. Chateri, *W. G. Smith.*
On naked ground by the sides of paths, &c. On one occasion this species was so abundant on a path in the Arboretum, that it showed as a red streak at a considerable distance away.

H. rutilans, *Saccardo.*
On the ground. A., P.

H. pilifera, *Saccardo.*
On soil in a plant-pot.

H. carbonigena, *Saccardo.*
On burnt ground. A.

H. omphalodes, *Mass.*
On burnt ground. A.

H. melaloma, *Mass.*
On burnt ground. P.

Humaria—*cont.*

**H. macrocystis.** *Saccardo.*
On burnt ground. P.

**H. granulata,** *Saccardo.*
On dung. Common.

Barlaea, *Saccardo.*

**B. Constellatio,** *Saccardo.*
On the ground. A.

**B. Crouani,** *Mass.*
On the ground among moss. A.

Curreyella, *Mass.*

**C. trachycarpa,** *Mass.*
On burnt ground. A.

Sepultaria, *Cke.*

**S. sumneriana,** *Mass.*
On the ground under pines. A.

Neottiella, *Cke.*

**N. Polytrichi,** *Mass.*
On the ground among moss. A.

**N. corallina,** *Mass.*
On the ground among moss. A., Q.

Dasyscypha, *Fries.*

**D. virginea,** *Fckl.*
On rotten twigs and herbaceous stems in damp places. Common.

**D. nivea,** *Mass.*
On damp fallen twigs. A., P.

**D. bicolor,** *Fckl.*
On dead oak twigs. A.

**D. aspidiicola,** *Saccardo.*
On dead fronds of *Nephrodium Filix-mas.* A., Q.

**D. hyalina,** *Mass.*
Inside fallen bark, on chips, &c. Common.

**D. leucophaea,** *Mass.*
On stems of dead herbaceous plants. B.

**D. melaxantha,** *Mass.*
On fallen branches of beech. Q.

**D. corticalis,** *Mass.*
On dead bark. Q.

**D. dematiicola,** *Mass.*
On dead rose stems. A.

Lachnea, *Fries.*

**L. stercorea,** *Gillet.*
On dung. Common.

**L. crucipila,** *Phil.*
On damp ground. P.

**L. scutellata,** *Gillet.*
On stumps, also on naked ground. A., Q.

**L. hemispherica,** *Gillet.*
On the ground under trees. A.

**L. erinacea,** *Saccardo.*
On rotten wood. A.

Tapesia, *Pers.*

**T. fusca,** *Fckl.*
On dead bark. Q.

**T. aurata,** *Mass.*
On dead wood. A.

**T. sanguinea,** *Fckl.*
On pine wood. A.

Chlorosplenium, *Fries.*

**C. aeruginosum,** *De Not.*
On branches of ash and oak. The wood on which this fungus grows is stained a deep verdigris-green colour, and was at one time used for the manufacture of fancy articles known as "Tunbridge ware." A., Q.

**C. discoideum,** *Mass.*
On an old trunk of *Robinia Pseudacacia.* The wood on which the fungus grows is stained green. A.

Sclerotinia, *Fckl.*

**S. tuberosa,** *Fckl.*
Parasitic on the rhizome of *Anemone nemorosa.* A destructive parasite when it finds its way into a bed of Anemones. B.

**S. Galanthi,** *Rehm.*
*See* p. 172. B.

**S. Sclerotiorum,** *Mass.*
On cabbage stalks. P.

Ciboria, *Fckl.*

**C. pseudo-tuberosa,** *Saccardo.*
On fallen, decaying acorns. A.

Cyathicula, *De Not.*

C. coronata, *De Not.*
On various kinds of dead or decaying herbaceous stems. Q.

Helotium, *Fries.*

H. claro-flavum, *Berk.*
On damp, decaying branches. Q.

H. Laburni, *Berk. & Broome.*
On branches of *Laburnum vulgare.* A.

H. lenticulare, *Fries.*
On beech trunks. A.

H. citrinum, *Fries.*
On stumps. A., B.

H. Virgultorum, *Karsten.*
On dead branches. Common.

H. cyathoideum, *Karsten.*
On dead herbaceous stems. B.

H. Herbarum, *Fries.*
On dead and damp herbaceous stems. Common.

H. renisporum, *Ellis.*
On petioles and veins of fallen oak leaves. A.

Helotium—*cont.*

H. conigenum, *Fries.*
On scales of fallen cones. A.

Belonidium, *Mont. & Dur.*

B. pruinosum, *Mass.*
On dead wood and bark; also on *Diatrype Stigma.* Q.

Mollisia, *Fries.*

M. atrata, *Karsten.*
On dead stems of various herbaceous plants. Common.

M. fusca, *Mass.*
On dead wood. A.

M. cinerea, *Karsten.*
On dead wood. Common.

M. melaleuca, *Saccardo.*
On chips. A.

Pseudopeziza, *Fckl.*

P. petiolaris, *Mass.*
On dead petioles of *Acer Pseudoplatanus.* P.

P. Ranunculi, *Saccardo.*
On dying leaves of *Ranunculus acris.* A.

### Ascoboleæ.

Ascobolus, *Pers.*

A. asininus, *Mass.*
On asses' dung. P.

A. marginatus, *Mass.*
On asses' dung. P.

A. furfuraceus, *Pers.*
On horse dung. A., P.

A. immersus, *Pers.*
On goose dung. A.

Saccobolus, *Boud.*

S. violascens, *Boud.*
On rabbit dung. Q.

Ascophanus, *Boud.*

A. microsporus, *Phil.*
On rabbit dung. Q.

A. carneus. *Boud.*
On an old shoe. A.

A. equinus, *Mass.*
On horse dung. A., Q.

Ryparobius, *Boud.*

R. sexdecimsporus, *Saccardo.*
On horse dung. A.

R. argenteus, *Berk. & Broome.*
On rabbit dung. Q.

### Bulgarieæ.

Bulgaria, *Fries.*

B. polymorpha, *Wetts.*
On beech trunks. Said to be a true parasite. A.

Ombrophila, *Fries.*

O. brunnea, *Phil.*
On dead herbaceous stem.

**Orbilia**, *Fries.*

**O. inflatula**, *Karsten.*
On rotten, damp wood. A.

**Calloria**, *Fries.*

**C. fusarioides**, *Fries.*
On dead nettle stems. Common.

**Coryne**, *Tulasne.*

**C. urnalis**, *Saccardo.*
On decayed stump. A., B.

**C. sarcoides**, *Tul.*
On rotten wood. Conidial and ascigerous stages common.

DERMATEÆ.

**Cenangium**, *Fries.*

**C. furfuraceum**, *De Not.*
On alder branches. Q.

**Scleroderris**, *Fries.*

**S. Rubi**, *Mass.*
On dead bramble stems. Q.

PATELLARIEÆ.

**Patinella**, *Saccardo.*

**P. macrospora**, *Mass.*
On rotten wood. A.

**Patellaria**, *Wahl.*

**P. clavispora**, *Berk. & Broome.*
On ash branches. A.

**Patellaria**—*cont.*

**P. atrata**, *Fries.*
On rotten floorcloth. A.

**Heterosphaeria**, *Grev.*

**H. Patella**, *Grev.*
On dead herbaceous stems. Q.

STICTEÆ.

**Stictis**, *Pers.*

**S. radiata**, *Pers.*
On hard, decorticated wood. Common.

**Propolis**, *Fries.*

**P. rhodoleuca**, *Fries.*
On scales of cones of *Pinus sylvestris*. A.

PHACIDIEÆ.

**Coccophacidium**, *Rehm.*

**C. Pini**, *Rehm.*
On bark of *Pinus sylvestris*. A.

**Schizothyrium**, *Desm.*

**S. aquilinum**, *Rehm.*
On dead fronds of *Pteris aquilina*.

**Phacidium**, *Fries.*

**P. multivalve**, *Kze. & Schm.*
On dead holly leaves. A.

**Phacidium**—*cont.*

**P. terrestre**, *Phil.*
On rotten leaves on the ground. A.

**Trochila**, *Fries.*

**T. Craterium**, *Fries.*
On dead ivy leaves. B.

**Colpoma**, *Wallr.*

**C. quercinum**, *Wallr.*
On oak branches. A.

**Xylographa**, *Fries.*

**X. parallela**, *Fries.*
On old wood. Q.

HYSTERIACEÆ.

**Hysterium**, *Tode.*

**H. pulicare**, *Pers.*
On fallen oak bark. A.

**Hysterographium**, *Corda.*

**H. Fraxini**, *De Not.*
On fallen ash branches. A.

Glonium, *Mühl.*

G. amplum, *Duby.*
On dead bramble stems. Q.

Hypoderma, *DC.*

H. Virgultorum, *DC.*
On dead bramble stems. Q.

H. conigenum, *Cke.*
On fallen cones of *Pinus sylvestris.* A.

Lophodermium, *Chev.*

L. hysterioides, *Saccardo.*
On dead hawthorn leaves. A.

Dichaena, *Fries.*

D. quercina, *Fries.*
On living oak branches. A.

## Phycomycetes.

### Piloboleæ.

Pilobolus, *Tode.*

P. crystallinus, *Tode.*
On dung.

P. Kleinii, *Van Tiegh.*
On dung.

Pilobolus—*cont.*

P. roridus, *Pers.*
On dung.

P. Oedipus, *Mont.*
On dung.

### Mucorini.

Pilaira, *Van Tieghem.*

P. anomala, *Schröt.*
On dung.

Mucor, *Micheli.*

M. Mucedo, *L.*
On various decaying organic substances.

M. lateritius, *Cke. & Mass.*
On rotting potatoes.

M. amethystinus, *Berk.*
On decaying bulbs.

M. pruinosus, *Berk. & Broome.*
On soil in a plant pot.

M. hyalinus, *Cke.*
On leaves of *Buxus sempervirens.*

Phycomyces, *Kunze.*

P. nitens, *Kunze.*
On fat, also on decaying seeds of *Magnolia.*

Spinellus, *Van Tiegh.*

S. fusiger, *Van Tiegh.*
On decaying Agarics.

Sporodinia, *Link.*

S. Aspergillus, *Schröt.*
On decaying fungi.

Helicostylum, *Corda.*

H. nigricans, *Van Tiegh.*
Once occurred abundantly on dead woodlice (*Oniscus*) collected in a heap under bark.

Thamnidium, *Link.*

T. elegans, *Link.*
On decaying vegetable matter.

Rhizopus, *Ehr.*

R. nigricans, *Ehr.*
On decaying fruit.

R. necans, *Mass.*
Parasitic on bulbs of *Lilium auratum*, received from Japan. In 1896 and 1897 large consignments of bulbs from Japan were completely destroyed by this fungus. For an account of its life-history *see* the *Kew Bulletin*, 1897, p. 87.

### Syncephalideæ.

**Syncephalis**, *Van Tiegh.*

**S. fasciculata**, *Van Tiegh.*

On wet and decaying vegetable matter.

### Peronosporeæ.

**Cystopus**, *Lév.*

**C. candidus**, *Lév.*

On *Capsella Bursa-pastoris*, *Cheiranthus Cheiri*, *Erysimum perofskianum*, and *Pringlea antiscorbutica*. It has been found impossible to keep the last named plant in cultivation, owing to the attacks of this parasite.

**C. Tragopogonis**, *Schröt.*

Parasitic on *Tragopogon pratensis* and *Ipomœa*.

**Phytophthora**, *De Bary.*

**P. infestans**, *De Bary.*

Parasitic on leaves and tubers of the potato (*Solanum tuberosum*). This fungus is the cause of the destructive scourge popularly called "potato disease," although unfortunately it is not the only fungoid disease to which the potato is subject.

**Plasmopara**, *Schröt.*

**P. pygmaea**, *Schröt.*

Parasitic on leaves of various Ranunculaceous plants *Anemone*, *Aconitum*, *Isopyrum*.

**P. nivea**, *Schröt.*

Parasitic on leaves of species of *Aegopodium* and *Conium*.

**Bremia**, *Regel.*

**B. Lactucae**, *Regel.*

Parasitic on leaves of *Centaurea* and *Hieracium*. This fungus is often very destructive to garden lettuce, appearing on the leaves as a very delicate white film.

**Peronospora**, *Corda.*

**P. Myosotidis**, *De Bary.*

On living leaves of *Myosotis palustris* and *Symphytum tuberosum*.

**P. Viciae**, *De Bary.*

On living leaves of various Leguminous plants.

**P. Ficariae**, *Tul.*

On living leaves of *Ranunculus Ficaria*.

**P. arborescens**, *De Bary.*

On living leaves of *Papaver Argemone*, *P. somniferum*, also on various garden forms of poppy.

**P. Violae**, *De Bary.*

On living leaves of *Viola canina* and *V. sylvestris*.

**P. Trifoliorum**, *De Bary.*

On living leaves of *Trifolium minor*, *T. medium*, and on *Lotus corniculatus*.

**P. grisea**, *De Bary.*

On living leaves of *Veronica Chamaedrys*.

**P. Lamii**, *De Bary.*

On living leaves of *Lamium rubrum*.

**P. effusa**, *Rabenh.*

On *Chenopodium album*.

**P. sordida**, *Berk.*

On living leaves of *Verbascum Thapsus*.

**P. sparsa**, *Berk.*

On living leaves of cultivated roses.

### Saprolegnieæ.

**Leptomitus**, *Agardh.*

**L. lacteus**, *Agardh.*
Attached to aquatic plants.

**Saprolegnia**, *Nees.*

**S. ferox**, *Nees.*
On dead flies in water.

**S. elongata**, *Mass.*
On decaying trunk of tree-fern in water. (*Mass Brit. Fungi*, 217, figs. 47–49.)

**Pythium**, *Pringsheim.*

**P. de-baryanum**, *Hesse.*
Parasitic and saprophytic on various plants. A destructive parasite to seedling plants, causing what is termed "damping off."

**Pythium**—*cont.*

**P. Cystosiphon**, *Lindst.*
In living fronds of *Wolffia Michelii.*

**Dityuchus**, *Leitg.*

**D. monosporus**, *Leitg.*
On decaying hyacinth bulbs.

**Diplanes**, *Leitg.*

**D. saprolegnioides**, *Leitg.*
On insects in water.

**Achlya**, *Nees.*

**A. polyandra**, *Hildebr.*
On insects in water.

### Entomophthoreæ.

**Empusa**, *Cohn.*

**E. Muscae**, *Cohn.*
On dead house flies.

**Entomophthora**, *Fresenius.*

**E. Aphidis**, *Hoffm.*
On aphides.

### Chytrideæ.

**Synchitrium**, *De Bary & Woronin.*

**S. Mercurialis**, *Fckl.*
On living leaves of *Mercurialis perennis.*

**S. Anemones**, *Woronin.*
On living leaves of *Anemone nemorosa.*

**Rhizidium**, *A. Braun.*

**R. Westii**, *Mass.*
Parasitic on *Spirogyra nitida.*

**Olpidium**, *Schröt.*

**O. Lemnae**, *Schröt.*
On the epidermal cells of *Lemna minor.*

### Protomyceteæ.

**Protomyces**, *Unger.*

**P. Menianthis**, *De Bary.*
On living leaves of *Pontentilla Comarum.*

**P. purpureo-tingens**, *Mass.*
On leaves of seedling sunflowers. (*Mass. Brit. Fungi*, 164, figs. 72, 73.)

## HYPODERMII.

### Uredineæ.

**Uromyces**, *Link.*

**U. Fabae**, *Cke.*
On *Vicia Faba.*

**Uromyces**—*cont.*

**U. Orobi**, *Wint.*
On *Lathyrus macrorhizus.*

Uromyces—*cont.*

**U. Polygoni**, *Wint.*
On *Polygonum aviculare.*

**U. Trifolii**, *Wint.*
On *Trifolium repens.*

**U. Geranii**, *Wint.*
On *Geranium pratense.*

**U. Valerianae**, *Wint.*
On *Valeriana officinalis.*

**U. Colchici**, *Mass.*
On *Colchicum speciosum.* A destructive parasite that appeared once in the grounds, attacking every plant of the species named; and although *C. autumnale* grew on one side of the bed of diseased plants, and *C. byzantinum* on the other, neither of the last named was attacked. (*Grev.* xxi., 6, pl. 182, figs. 16–18.)

**U. Poae**, *Rabh.*
Aecidiospores on *Ranunculus Ficaria;* teleutospores on *Poa annua.*

**U. Pisi**, *Wint.*
Teleutospores and uredospores on *Pisum sativum;* aecidiospores not seen, although species of *Euphorbia* are not wanting.

**U. Alliorum**, *Cke.*
Teleutospores on *Allium.*

**U. Ficariae**, *Wint.*
On *Ranunculus Ficaria.*

**U. Scillarum**, *Wint.*
On *Scilla bifolia.*

**U. Erythronii**, *DC.*
On *Lilium candidum.*

Puccinia, *Persoon.*

**P. Galii**, *Wint.*
On *Galium verum.*

**P. Calthae**, *Link.*
On *Caltha palustris.*

**P. Gentianae**, *Wint.*
On *Gentiana acaulis.*

**P. Silenes**, *Schröt.*
On *Silene inflata.*

Puccinia—*cont.*

**P. Lapsanae**, *Schulz.*
On *Lapsana communis.*

**P. variabilis**, *Grev.*
On *Taraxacum officinale.*

**P. Violae**, *Wint.*
On *Viola canina.*

**P. albescens**, *Grev.*
On *Adoxa moschatellina.*

**P. Menthae**, *Pers.*
On *Origanum vulgare.*

**P. Vincae**, *Berk.*
On *Vinca major.*

**P. Graminis**, *Pers.*
Teleutospores on *Alopecurus pratensis* and *Avena elatior*, notwithstanding the great quantity of *Berberis* and *Mahonia* present in the grounds, the most careful and continued search has failed to reveal the presence of the aecidiospore stage. This is probably the most destructive fungus known, doing injury to the extent of many millions of pounds sterling every year to the wheat crop in Europe alone.

**P. coronata**, *Corda.*
Teleutospores on *Holcus mollis.* Aecidiospore stage not observed.

**P. sylvatica**, *Schröt.*
Teleutospores on *Carex remota.* Aecidiospore not seen.

**P. suaveolens**, *Wint.*
On *Carduus arvensis.*

**P. bullata**, *Schröt.*
On *Silaus pratensis.*

**P. argentata**, *Wint.*
On *Impatiens fulva.*

**P. Hydrocotyles**, *Plow.*
On *Hydrocotyle vulgaris.*

**P. Campanulae**, *Carm.*
On *Campanula Rapunculus.*

**P. Aegopodii**, *Wint.*
On *Aegopodium Podagraria.*

Puccinia—*cont.*

P. Thalictri, *Cheval.*
On *Thalictrum flavum.*

P. Veronicae, *Schröt.*
On *Veronica montana.*

P. Malvacearum, *Mont.*
On *Malva moschata* and *Althaea rosea.*

P. Circeæ, *Pers.*
On *Circaea lutetiana.*

P. Buxi, *DC.*
On *Buxus sempervirens.*

Triphragmium, *Link.*

T. Ulmariae, *Wint.*
On *Spiraea Ulmaria.*

Phragmidium, *Link.*

P. Tormentillæ, *Fckl.*
On *Potentilla Fragariastrum.*

P. violaceum, *Schultz.*
On *Rubus fruticosus.*

P. Rubi, *Schröt.*
On *Rubus fruticosus.*

P. subcorticatum, *Schröt.*
On *Rosa canina*, also on cultivated roses.

Endophyllum, *Lév.*

E. Sempervivi, *Lév.*
On *Sempervivum tectorum.*

Gymnosporangium, *Castagne.*

G. Sabinæ, *Wint.*
Teleutospores on *Juniperus Sabina.*

Melampsora, *Castagne.*

M. Lini, *Wint.*
On *Linum catharticum.*

M. farinosa, *Schröt.*
On *Salix Caprea.*

M. populina, *Lév.*
On *Populus balsamifera.*

M. betulina, *Desm.*
On *Betula alba.*

Coleosporium, *Lév.*

C. Senecionis, *Wint.*
Uredospores on *Senecio vulgaris.*

C. Sonchi, *Schröt.*
On *Sonchus oleraceus.*

C. Campanulæ, *Wint.*
On *Campanula Trachelium.*

C. Euphrasiae, *Wint.*
On *Euphrasia officinalis.*

Chrysomyxa, *Unger.*

C. Pyrolæ, *Schröt.*
On *Pyrola.*

Cronartium, *Fries.*

C. flaccidum, *Alb. & Schw.*
On *Paeonia.*

## Ustilagineæ.

Ustilago, *Pers.*

U. longissima, *Wint.*
On *Glyceria aquatica.*

U. hypodytes, *Fries.*
On *Triticum repens.*

U. Caricis, *Wint.*
On *Carex panicea.*

U. olivacea, *Tul.*
On *Carex riparia.*

U. Scabiosæ, *Wint.*
In the anthers of *Scabiosa arvensis.*

U. Vaillantii, *Tul.*
In the anthers of *Chionodoxa Luciliae.*

Sphacelotheca, *De Bary.*

S. Hydropiperis, *De Bary.*
In the ovary of *Polygonum Hydropiper.*

Urocystis, *Rab.*

U. Colchici, *Tul.*
On *Colchicum autumnale.*

U. Gladioli, *W. G. Smith.*
On *Gladiolus.*

U. Anemones, *Schröt.*
On *Ranunculus repens.*

U. Violæ, *Berk. & Broome.*
On *Viola odorata* and *V. canina.*

**Entyloma**, *De Bary.*

**E. Ranunculi**, *Wint.*
On *Ranunculus Ficaria.*

**Tuburcinia**, *Fries.*

**T. Scabies**, *Berk.*
On potato tubers. Causing the disease known as "scab."

**Doassansia**, *Cornu.*

**D. Sagittariae**, *Schröt.*
On *Sagittaria sagittifolia.*

**Thecaphora**, *Fing.*

**T. hyalina**, *Fing.*
On *Calystegia sepium.*

**Graphiola**, *Poitier.*

**G. Phoenicis**, *Moug.*
On leaves of *Phoenix dactylifera.*

## SPHÆROPSIDEÆ.

### Sphærioideæ.

The majority of species included in the present family occur on leaves or herbaceous stems, some as parasites, others as saprophytes. All are very minute, and the great majority require the use of a pocket-lens for their detection.

**Phoma**, *Fries.*

**P. Coluteæ**, *Saccardo.*
On branches of *Colutea arborescens.*

**P. Coronillæ**, *West.*
On *Coronilla Emerus* and *Baccharis halimifolia.*

**P. Sophoræ**, *Saccardo.*
On *Sophora japonica.*

**P. Amorphæ**, *Saccardo.*
On *Amorpha fruticosa.*

**P. Herminieræ**, *Cke.*
On *Herminiera Elaphroxylon.*

**P. rudis**, *Saccardo.*
On *Laburnum.*

**P. Ryckholtii**, *Saccardo.*
On *Symphoricarpus.*

**P. Xylostei**, *Cke. & Mass.*
On *Lonicera.*

**P. viventis**, *Cke.*
On living twigs of *Lonicera.*

**P. Beckhausii**, *Cke.*
On *Viburnum Lantana.*

**P. Weigeliæ**, *Speg.*
On *Diervilla rosea.*

Phoma—*cont.*

**P. sambucella**, *Saccardo.*
On *Sambucus nigra.*

**P. Landegheimiæ**, *Saccardo.*
On *Philadelphus.*

**P. Philadelphi**, *Cke.*
On *Philadelphus.*

**P. foveolaris**, *Fries.*
On *Euonymus*

**P. Celastriniæ**, *Cke.*
On *Euonymus americanus.*

**P. berberina**, *Saccardo.*
On *Berberis vulgaris.*

**P. Prunorum**, *Cke.*
On *Prunus Laurocerasus.*

**P. Pruni-lusitanicæ**, *Cke.*
On *Prunus lusitanica.*

**P. libertiana**, *Sacc. & Roum.*
On *Larix europæus.*

**P. Sorbariæ**, *Cke.*
On *Spiræa japonica* and *Neillia opulifolia.*

**P. Opulifoliæ**, *Cke.*
On *Neillia opulifolia.*

**P. Mali**, *Schulzer & Sacc.*
On apple twigs.

**P. ambigua**, *Saccardo.*
On pear twigs.

**P. Amelanchieris**, *Cke.*
On *Amelanchier.*

Phoma—*cont.*

P. pusilla, *Schulzer & Sacc.*
On *Rosa canina.*

P. incarcerata, *Saccardo.*
On *Rosa canina.*

P. Viniferæ, *Cke.*
On *Vitis vinifera.*

P. diplodioides, *Saccardo.*
On *Aesculus Hippocastanum.*

P. scobina, *Cke.*
On *Fraximus excelsior.*

P. Forsythiæ, *Cke.*
On *Forsythia.*

P. aromatica, *Cke.*
On *Calycanthus occidentalis.*

P. domestica, *Saccardo.*
On *Jasminum officinale.*

P. Jasmini, *Cke.*
On *Jasminum officinale.*

P. depressa, *Lév.*
On *Syringa vulgaris.*

P. Laurella, *Saccardo.*
On *Laurus nobilis.*

P. Rhododendri, *Cke.*
On *Rhododendron.*

P. Corni, *Fckl.*
On *Cornus suecica.*

P. Barbari, *Cke.*
On *Lycium barbarum.*

P. viridarii, *Saccardo.*
On *Magnolia.*

P. stictica, *Berk. & Broome.*
On *Buxus sempervirens.*

P. cistina, *Cke.*
On *Cistus laurifolius.*

P. robergeana, *Saccardo.*
On *Staphylea pinnata.*

P. Staphyleæ, *Cke.*
On *Staphylea pinnata.*

P. Ophites, *Saccardo.*
On *Hibiscus syriacus.*

P. Exul, *Saccardo.*
On *Maclura aurantiaca.*

P. Loti, *Cke.*
On *Diospyros Lotus.*

Phoma—*cont.*

P. Tecomæ, *Saccardo.*
On *Tecoma radicans.*

P. Radicantis, *Cke.*
On *Tecoma radicans.*

P. platanoides, *Cke.*
On *Acer Pseudoplatanus.*

P. Lebiseyi, *Saccardo.*
On *Negundo aceroides.*

P. velata, *Saccardo.*
On *Tilia vulgaris*, &c.

P. Paulowniæ, *Thum.*
On *Paulownia imperialis.*

P. tamaricella, *Saccardo.*
On *Tamarix.*

P. Tamarisci, *Mont.*
On *Tamarix gallica.*

P. eleagnella, *Cke.*
On *Eleagnus.*

P. papalocystis, *Saccardo.*
On *Platanus.*

P. moricola, *Saccardo.*
On *Morus nigra.*

P. crassipes, *Cke.*
On *Broussonetia papyrifera.*

P. cinerascens, *Saccardo.*
On *Ficus Carica.*

P. juglandina, *Saccardo.*
On *Juglans regia.*

P. quercella, *Sacc. & Roum.*
On *Quercus coccinea.*

P. salicina, *West.*
On *Salix viminalis.*

P. ligustrina, *Saccardo.*
On *Ligustrum.*

P. oppilata, *Fries.*
On *Betula alba.*

P. Celtidis, *Cke.*
On *Celtis occidentalis.*

P. leucostigma, *Lév.*
On leaves of *Hedera* and *Buxus.*

P. pustulata, *Saccardo.*
On branches of *Acer palmatum.*

P. collabens, *Cke.*
On living leaves of *Prunus lusitanica.*

Phoma—*cont.*

**P. Rhodoræ**, *Cke.*
On *Rhododendron* leaves.

**P. dispersus**, *Cke.*
On leaves of *Platanus.*

**P. Aucubæ**, *West.*
On leaves of *Aucuba japonica.*

**P. Mahoniæ**, *Thum.*
On leaves of *Berberis Aquifolium.*

**P. vulgaris**, *Saccardo.*
On leaves of *Clematis Vitalba.*

**P. Lingam**, *Tode.*
On stem of *Brassica oleracea.*

**P. Alcearum**, *Cke.*
On leaves of *Althæa rosea.*

**P. Malvacearum**, *West.*
On *Malva moschata.*

**P. Arctii**, *Lasch.*
On *Arctium lappa.*

**P. Dipsaci**, *Cke.*
On *Dipsacus sylvestris.*

**P. Achilleæ**, *Saccardo.*
On *Achillea Millefolium.*

**P. Dahliæ**, *Berk.*
On *Dahlia.*

**P. rubella**, *Cke.*
On stems of various Umbelliferous plants.

**P. Dulcamaræ**, *Saccardo.*
On *Solanum Dulcamara.*

**P. Tatulæ**, *Cke.*
On *Datura Stramonium.*

**P. Polemonii**, *Cke.*
On *Polemonium coeruleum.*

**P. Labiatarum**, *Cke.*
On *Marrubium.*

**P. Spirææ**, *Desm.*
On *Spiræa Ulmaria.*

**P. Herbarum**, *West.*
On *Digitalis*, *Malva*, *Aristolochia Sipho*, and *Menispermum.*

**P. Polygonorum**, *Cke.*
On *Polygonum cuspidatum.*

Phoma—*cont.*

**P. Onagracearum**, *Cke.*
On *Epilobium angustifolium* and *Oenothera biennis.*

**P. oleracea**, *Saccardo.*
On *Erysimum Alliaria* and *Sisymbrium austriacum.*

**P. sarmenticia**, *Saccardo.*
On *Menispermum canadense.*

**P. Calystegiæ**, *Cke.*
On *Calystegia sepium.*

**P. durandiana**, *Sacc. & Roum.*
On *Rumex.*

**P. Lysimachiæ**, *Cke.*
On *Lysimachia vulgaris.*

**P. glandicola**, *Desm.*
On fallen acorns.

**P. Morphæ**, *Saccardo.*
On stems and capsules of *Papaver somniferum.*

**P. Chamaeropsis**, *Cke.*
On palm petioles.

**P. Acori**, *Cke.*
On *Acorus Calamus.*

**P. Rusci**, *Saccardo.*
On stems and phyllodes of *Ruscus.*

**P. nebulosa**, *Fries.*
On stem of *Gentiana thibelica.*

**P. Typharum**, *Fckl.*
On *Typha angustifolia.*

**P. pulla**, *Saccardo.*
On *Hedera Helix.*

**P. notha**, *Berk.*
On *Platanus.*

**P. planiuscula**, *Saccardo.*
On *Robinia Pseudacacia* and *Ulmus campestris.*

**P. Solidaginis**, *Cke.*
On *Solidago.*

**P. Samarorum**, *Desm.*
On fruit of *Fraxinus excelsior.*

**Coniothyrium**, *Corda.*

**C. cassiæcolum**, *Cke.*
On stems of *Cassia marylandica.*

Coniothyrium—*cont.*

C. concentricum, *Desm.*
On living leaves of *Yucca.* An injurious parasite, forming large dead blotches on the leaves.

Rhabdospora, *Mont.*

R. Muggenbergii, *Saccardo.*
On branches of *Vitis vinifera.*

Diplodia, *Desm.*

D. atrata, *Desm.*
On *Negundo aceroides.*

D. Genistarum, *Cke.*
On *Genista aetnensis.*

D. Amorphæ, *Wallr.*
On *Amorpha fruticosa.*

D. cistina, *Cke.*
On *Cistus laurifolius.*

D. Roumegueri, *Saccardo.*
On *Prunus Laurocerasus.*

D. Loniceræ, *Fckl.*
On *Lonicera caprifolium.*

D. sambucina, *Saccardo.*
On *Sambucus nigra.*

D. Lantanæ, *Fckl.*
On *Viburnum Lantana.*

D. Paulowniæ, *Cke.*
On *Paulownia imperialis.*

D. Ligustri, *West.*
On *Ligustrum vulgare.*

D. laurina, *Saccardo.*
On *Laurus nobilis.*

D. Elæagni, *Pass.*
On *Elæagnus angustifolius.*

D. Celtidis, *Roum.*
On *Celtis occidentalis.*

D. Mori, *West.*
On *Morus alba.*

D. microsporella, *Saccardo.*
On *Ligustrum ovalifolium.*

D. inconspicua, *Cke.*
On leaves of *Buxus sempervirens.*

D. Magnoliæ, *West.*
On twigs and leaves of *Magnolia grandiflora.*

D. Sarmentorum, *Fries.*
On *Menispermum canadense.*

Diplodina, *Saccardo.*

D. Salicis, *West.*
On *Salix babylonica.*

D. deformis, *Karsten.*
On *Sambucus nigra.*

Hendersonia, *Berk.*

H. vagans, *Fckl.*
On *Fraxinus.*

H. Loniceræ, *Fries.*
On *Lonicera.*

H. Tiliæ, *Lév.*
On *Tilia parvifolia.*

H. ambiens, *Cke.*
On *Acer dasycarpum.*

Camarasporium, *Schultz.*

C. Berberidis, *Cke.*
On twigs of *Berberis vulgaris.*

C. Limoniæ, *Cke.*
On *Citrus trifoliata.*

C. cistinum, *Cke.*
On *Cistus laurifolius.*

C. Quercus, *Saccardo.*
On *Quercus coccinea.*

C. Mori, *Saccardo.*
On *Morus alba.*

Cytispora, *Fries.*

C. microspora, *Corda.*
On *Amelanchier.*

C. atra, *Bon.*
On *Morus alba.*

C. carbonacea, *Fries.*
On *Celtis occidentalis.*

C. Schweinitzii, *Saccardo.*
On *Salix fragilis.*

C. Salicis, *Rabh.*
On *Salix vitellina.*

C. intermedia, *Saccardo.*
On *Quercus.*

C. Platani, *Fckl.*
On *Platanus.*

C. flavovirens, *Saccardo.*
On *Acer.*

C. ambiens, *Saccardo.*
On *Fraxinus* and *Betula.*

C. Euonymi, *Cke.*
On *Euonymus americanus.*

Cytispora—*cont.*

C. Staphyleæ, *Cke.*
On *Staphylea pinnata* and *S. trifoliata.*

C. Jasmini, *Cke.*
On *Jasminum officinale.*

C. Palmarum, *Cke.*
On petioles of palm leaves.

Phyllosticta, *Pers.*

P. Paviæ, *Desm.*
On *Aesculus parviflora.*

P. sanguinea, *Desm.*
On *Cotoneaster frigida.*

P. Euonymi, *Saccardo.*
On *Euonymus europæus.*

P. tinea, *Saccardo.*
On *Viburnum Tinus.*

P. Syringæ, *West.*
On *Syringa vulgaris.*

P. Phillyreæ, *Saccardo.*
On *Phillyrea.*

P. Rhododendri, *West.*
On *Rhododendron.*

P. Arbuti, *Desm.*
On *Arbutus Unedo.*

P. Garryæ, *Cke. & Hark.*
On *Garrya elliptica.*

P. ilicicola, *Fries.*
On holly leaves.

P. Magnoliæ, var. Cookei, *Saccardo.*
On *Magnolia grandiflora.*

P. Mahoniæ, *Sacc. & Speg.*
On *Berberis Aquifolium.*

P. asiatica, *Cke.*
On *Berberis asiatica.*

P. Paulowniæ, *Saccardo.*
On *Paulownia imperialis.*

P. sidaecola, *Cke.*
On *Napæa dioica.*

P. Brassicæ, *Currey.*
On *Brassica.*

P. Epimedii, *Saccardo.*
On *Epimedium alpinum.*

P. Impatientis, *Kirch.*
On *Impatiens parviflora.*

Phyllosticta—*cont.*

P. destructiva, *Desm.*
On *Malva sylvestris.*

P. Dulcamaræ, *Saccardo.*
On *Solanum Dulcamara.*

P. Plantaginis, *Saccardo.*
On *Plantago major.*

P. Aizoon, *Cke.*
On *Sedum Aizoon.*

P. Podophylli, *Curt.*
On *Podophyllum peltatum.*

P. hydrophila, *Speg.*
On *Nymphæa alba.*

P. ruscicola, *Desm.*
On *Ruscus aculeatus.*

Asteroma, *DC.*

A. Solidaginis, *Cke.*
On *Solidago elliptica.*

A. delicatulum, *Desm.*
On *Colutea arborescens.*

Septoria, *Fries.*

S. cornicola, *Desm.*
On *Cornus.*

S. Ligustri, *Desm.*
On *Ligustrum.*

S. Chelidonii, *Desm.*
On *Chelidonium majus.*

S. Lycopi, *Pass.*
On *Lycopus europæus.*

S. Doronici, *Pass.*
On *Doronicum Pardalianches.*

S. Centaureæ, *Roum.*
On *Centaurea nigra.*

S. Aristolochiæ, *Saccardo.*
On *Aristolochia Clematitis.*

Leptostroma, *Fries.*

L. filicinum, *Fries.*
On *Pteris aquilina.*

Discula, *Saccardo.*

D. Desmazierii, *Berk. & Broome.*
On living branches of *Tilia vulgaris* and *T. platyphyllos.* The most destructive tree parasite present in the Gardens, destroying the bark and hence killing the branches of

Discula—*cont.*

the European species of *Tilia*. Several trees in the neighbourhood of Kew have been completely killed by this parasite.

Gloeosporium, *Mont.*

G. Aquilegiæ, *Thum.*
On *Aquilegia.*

G. Berberidis, *Cke.*
On *Berberis asiatica.*

G. nervisequum, *Saccardo.*
On living leaves of *Platanus orientalis* and *P. acerifolia.* A very destructive parasite, causing the leaves to fall prematurely.

Cryptosporium, *Kunze.*

C. Hippocastani, *Cke.*
On *Aesculus Hippocastanum.*

Libertella, *Desm.*

L. Rosæ, *Desm.*
On bark of *Betula alba.*

Melanconium, *Link.*

M. sphæroideum, *Link.*
On *Alnus incana.*

Melanconium—*cont.*

M. bicolor, *Nees.*
On bark of *Betula* and *Quercus.*

Cheirospora, *Fries.*

C. hedericola, *Saccardo.*
On *Hedera Helix.*

Coryneum, *Nees.*

C. cistinum, *Cke.*
On *Cistus laurifolius.*

C. umbonatum, *Nees.*
On *Ulmus* and *Quercus.*

C. notarisianum, *Saccardo.*
On *Betula papyrifera.*

Pestalozzia, *De Not.*

P. Guepini, *Desm.*
Parasitic on living leaves of cultivated species of *Camellia*, causing unsightly greyish-white blotches to appear.

Steganosporium, *Corda.*

S. cellulosum, *Corda.*
On bark of *Tilia cordata.*

## HYPHOMYCETES.

### Mucedineæ.

Oospora, *Wallr.*

O. fasciculata, *Sacc. & Vogl.*
On *Epilobum montanum.*

O. inaequalis, *Cke. & Mass.*
On bamboo culms.

Fusidium, *Link.*

F. griseum, *Link.*
On dead oak leaves.

Monilia, *Pers.*

M. fructigena, *Pers.*
A very destructive parasite to apples, which under its influence become spotted and unsaleable.

M. pruinosa, *Cke. & Mass.*
On fading leaves of *Caladium.*

Cylindrium, *Bon.*

C. Cordae, *Saccardo.*
On dead oak leaves.

C. flavo-virens, *Bon.*
On dead leaves of oak and beech.

Oidium, *Link.*

O. farinosum, *Cke.*
On leaves and young twigs of *Pyrus Malus.* An injurious fungus, causing the leaves to fall prematurely, consequently the fruit does not ripen properly.

O. erumpens, *Cke. & Mass.*
On living leaves of *Rivea hypocrateriformis.*

**Oidium**—*cont.*

**O. monilioides**, *Link.*
On living leaves of *Holcus lanatus.*

**O. leucoconium**, *Desm.*
On living leaves of cultivated roses.

**Oidium**—*cont.*

**O. Chrysanthemi**, *Rab.*
On living leaves of cultivated varieties of *Chrysanthemum.*

**O. pactolinum**, *Cke.*
On living leaves of *Jasminum.*

CEPHALOSPORIEÆ.

**Botryosporium**, *Corda.*

**B. pulchrum**, *Corda.*
Overrunning stored *Dahlia* tubers.

**Œdocephalum**, *Preuss.*

**O. Preusii**, *Saccardo.*
On dead leaves of *Heuchera.*

**O. sulphureum**, *Cke. & Mass.*
On decaying rope.

**Rhopalomyces**, *Corda.*

**R. elegans**, *Corda.*
On decaying vegetable matter.

**Trichoderma**, *Pers.*

**T. viride**, *Pers.*
On decaying wood, moss, &c. This is considered to be the conidial condition of *Hypocrea rufa.*

ASPERGILLEÆ.

**Aspergillus**, *Micheli.*

**A. glaucus**, *Link.*
On all kinds of damp or decaying plants.

**A. candidus**, *Link.*
On decaying plants, fungi, &c.

**Penicillium**, *Link.*

**P. glaucum**, *Link.*
On decaying plants.

**P. candidum**, *Link.*
On decaying plants.

**Hyphoderma**, *Fries.*

**H. roseum** *Fries.*
On rotten wood.

**Rhinotrichum**, *Corda.*

**R. repens**, *Preuss.*
On rotten wood.

**R. niveum**, *Cke. & Mass.*
On old wood.

**R. Bloxami**, *Berk. & Broome.*
On dead wood.

**Sporotrichum**, *Link.*

**S. laxum**, *Nees.*
On rotten wood.

**Sporotrichum**—*cont.*

**S. sulphureum**, *Grev.*
On dead bark.

**S. chlorinum**, *Link.*
On fallen oak leaves.

**Monosporium**, *Bon.*

**M. coprophilum**, *Cke. & Mass.*
On dung.

**Botrytis**, *Micheli.*

**B. corolligena**, *Cke. & Mass.*
On fading corolla of *Calceolaria.* (*See* plate.)

**B. argillacea**, *Cke.*
On wood.

**B. Croci**, *Cke. & Mass.*
On dead leaves of *Crocus.*

**B. fascicularis**, *Corda.*
On dead pericarps of *Aesculus Hippocastanum.*

**B. cinerea**, *Pers.*
On decaying vegetable matter.

**B. vulgaris**, *Fries.*
On dead and also on living plants The species of *Botrytis* are not very clearly understood; some are known to

**Botrytis**—*cont.*

be the conidial forms of species of *Peziza*. At all events certain kinds of *Botrytis* are very destructive parasites, more especially to bulbous Monocotyledons, lilies, tulips, snowdrops, &c., being destroyed in a wholesale manner, and as sclerotia are formed, many of which remain in the soil, it is impossible to grow these plants in succession, if the disease has once gained a footing.

**B. cana**, *Kze. & Schm.*

On decaying plants.

**B. vera**, *Fries.*

On dead herbaceous plants.

**Ovularia**, *Saccardo.*

**O. lychnicola**, *Mass.*

On living leaves of *Lychnis dioica.*

**O. Berberidis**, *Cke.*

On living leaves of *Berberis asiatica.*

**O. Filipendulæ**, *Cke.*

On living leaves of *Spiræa Filipendula.*

**O. Syringæ**, *Berk.*

On living leaves of *Syringa vulgaris.*

**Sepedonium**, *Link.*

**S. chrysospermum**, *Fries.*

On various decaying fungi. Said to be the conidial form of *Hypomyces chrysospermus*, Tul.

## Verticillieæ.

**Verticillium**, *Nees.*

**V. Candelabrum**, *Bon.*

On rotten wood.

**V. compactiusculum**, *Saccardo.*

On decaying plants.

**V. ampelinum**, *Cke. & Mass.*

On living stem of *Vitis.*

**V. lateritium**, *Berk.*

On decaying herbaceous stems.

**Acrostolagmus**, *Corda.*

**A. cinnabarinus**, *Corda.*

On decaying plants.

**Trichothecium**, *Link.*

**T. roseum**, *Link.*

On dead bark, decaying fruit, &c.

**T. candidum**, *Wallr.*

On dead bark.

**Arthrobotrys**, *Corda.*

**A. rosea**, *Mass.*

On rotten wood.

**Mycogone**, *Link.*

**M. rosea**, *Link.*

On decaying agarics.

**M. cervina**, *Ditm.*

On decaying *Peziza*.

**Ramularia**, *Fckl.*

**R. lactea**, *Fckl.*

On living leaves of *Viola odorata.*

**R. Hellebori**, *Fckl.*

On *Helleborus fœtidus.*

**R. variabilis**, *Fckl.*

On living leaves of *Verbascum Thapsus.*

**Helicomyces**, *Link.*

**H. tubulosus**, *Riess.*

On rotten wood.

### Coniosporeæ.

**Coniosporium**, *Link.*

**C. Arundinis**, *Saccardo.*
On *Arundo Donax.*

**Coniosporium**—*cont.*

**C. olivaceum**, *Link.*
On wood.

### Toruleæ.

**Torula**, *Pers.*

**T. monilioides**, *Corda.*
On rotten wood.

**T. pulveracea**, *Corda.*
On rotten wood.

**T. Herbarum**, *Link*
On dead herbaceous stems.

**T. gyrosa**, *Cke. & Mass.*
On rotten pine wood.

**Torula**—*cont.*

**T. antennata**, *Pers.*
On rotten wood.

**T. ovalispora**, *Berk.*
On rotten wood.

**T. Graminis**, *Corda.*
On dead grass leaves.

**T. asperula**, *Saccardo.*
On damp paper.

### Echinobotryeæ.

**Echinobotryum**, *Corda.*

**E. atrum**, *Corda.*
On rotten wood.

### Periconieæ.

**Stachybotrys**, *Corda.*

**S. atra**, *Corda.*
On damp paper.

**S. lobulata**, *Berk.*
On damp paper.

**Stachybotrys**—*cont.*

**S. asperula**, *Mass.*
On damp packing paper.

**S. minima**, *Cke.*
On damp paper.

### Arthrineæ.

**Arthrinum**, *Kunze.*

**A. caricicolum**, *Kunze.*
On dead leaves of *Carex.*

### Trichosporieæ.

**Trichosporium**, *Fries.*

**T. umbrinum**, *Saccardo.*
On rotten bark.

**T. fuscum**, *Saccardo.*
On pine bark.

**Zygodesmus**, *Corda.*

**Z. fuscus**, *Corda.*
On rotten wood.

### Monotosporeæ.

**Monotospora**, *Fries.*

**M. sphaerocephala**, *Berk. & Broome.*
On decaying vegetation.

**M. repens**, *Mass.*
On dead plants.

**Monotospora**—*cont.*

**M. pumila**, *Mass.*
Parasitic on *Graphium flexuosum.*

**M. asperospora**, *Cke. & Mass.*
On dead branches of *Clematis.*

**Hadrotrichum**, *Fckl.*
**H. arundinaceum**, *Cke. & Mass.*
On dead *Arundo conspicua.*

**Acremoniella**, *Saccardo.*
**A. fusca**, *Saccardo.*
On rotten wood.

### Haplographeæ.

**Haplographium**, *Saccardo.*
**H. Chartarum**, *Saccardo.*
On wet paper.

**Dematium**, *Pers.*
**D. hispidulum**, *Fries.*
On dead leaves of *Arundo Donax.*

**Dematium**—*cont.*
**D. vinosum**, *Mass.*
On damp, gummed paper.

### Myxotricheæ.

**Bolacotricha**, *Berk. & Broome.*
**B. grisea**, *Berk. & Broome.*
On decaying sacking.

**Myxotrichum**, *Kunze.*
**M. Chartarum**, *Kunze.*
On damp paper.

### Bisporeæ.

**Bispora**, *Corda.*
**B. monilioides**, *Corda.*

### Cladosporieæ.

**Polythrincium**, *Kunze.*
**P. Trifolii**, *Kunze.*
On living leaves of *Trifolium medium.*

**Cladosporium**, *Link.*
**C. epiphyllum**, *Mart.*
On dead leaves of various trees.

**C. sphærospermum**, *Penzig.*
On leaves of *Citrus.*

**Cladosporium**—*cont.*
**C. Herbarum**, *Link.*
On decaying herbaceous plants, fungi, &c.

**C. nodulosum**, *Corda.*
On rotten wood.

**C. fasciculare**, *Fries.*
On stems of *Lilium auratum.*

**C. Orchidearum**, *Cke. & Mass.*
On leaves of many species of cultivated orchids.

### Clasterosporieæ.

**Clasterosporium**, *Schw.*
**C. fasciculare**, *Saccardo.*
On dead wood.

**Clasterosporium**—*cont.*
**C. Fungorum**, *Saccardo.*
On the hymenium of living *Corticium molle.*

### Helminthosporieæ.

**Helminthosporium**, *Link.*
**H. velutinum**, *Link.*
On rotten wood.

**H. exasperatum**, *Berk. & Broome.*
On fading leaves of *Dianthus deltoides* and other caryophyllaceous plants.

**Helminthosporium**—*cont.*
**H. macrocarpum**, *Grev.*
On dead wood.

**H. fusiforme**, *Corda.*
On wood.

**H. apiculatum**, *Corda.*
On wood.

Helminthosporium—*cont.*

**H. Smithii**, *Berk. & Broome.*
On dead holly.

**H. densum**, *Sacc. & Roum.*
On dead branch of *Morus alba.*

Brachysporium, *Saccardo.*

**B. stemphylioides**, *Corda.*
On dead wood.

**B. apicale**, *Berk. & Broome.*
On dead branches.

**B. obovatum**, *Berk.*
On rotten wood.

Cercospora, *Fresenius.*

**C. Calthæ**, *Cke.*
On fading leaves of *Caltha palustris.*

**C. moricola**, *Cke.*
On leaves of *Morus rubra.*

**C. concentrica**, *Cke.*
On leaves of *Yucca filamentosa* and *Y. gloriosa.*

Heterosporium, *Klotzsch.*

**H. echinulatum**, *Cke.*
On living leaves of species of *Convallaria*, *Scilla*, and *Smilax.* When abundantly developed, this species proves to be an injurious parasite, destroying the foliage.

**H. Laricis**, *Cke. & Mass.*
On larch leaves.

**H. minutulum**, *Cke. & Mass.*
On living leaves of *Chamærops humilis.*

**H. Typharum**, *Cke. & Mass.*
On living leaves of *Typha angustifolia.*

**H. epimyces**, *Cke. & Mass.*
On old specimens of *Polyporus squamosus*, *Boletus felleus*, and *Russula nigricans.*

## Macronemeæ.

Stemphylium, *Wallr.*

**S. asperosporum**, *Cke. & Mass.*
On damp paper.

Macrosporium, *Fries.*

**M. commune**, *Rabh.*
On decaying plants.

**M. Sarcinula**, *Berk.*
On decaying *Pæonia albiflora.*

**M. nobile**, *Vize.*
On decaying leaves of *Dianthus.*

Macrosporium—*cont.*

**M. Alliorum**, *Cke. & Mass.*
On fading leaves of *Allium.*

**M. Convallariæ**, *Fries.*
On fading leaves of *Polygonatum multiflorum.*

Fumago, *Pers.*

**F. vagans**, *Pers.*
Forming sooty patches on leaves of *Ulmus campestris.*

## Helicosporeæ.

Helicosporium, *Nees.*

**H. viride**, *Saccardo.*
On decaying birch wood.

## Stilbeæ.

Stilbum, *Tode.*

**S. tomentosum**, *Schr.*
Parasitic on *Trichia varia.*

**S. vulgare**, *Tode.*
On rotten wood.

Stilbum—*cont.*

**S. erythrocephalum**, *Ditm.*
On rabbit dung.

**S. vaporarium**, *Berk. & Broome.*
On wood.

Stilbum—*cont.*

S. fimetarium, *Berk. & Broome.*
On rabbit dung.

S. turbinatum, *Tode.*
On rotten wood.

S. citrinellum, *Cke. & Mass.*
On fading leaves of *Lycopodium.*

Isaria, *Pers.*

I. citrina, *Pers.*
On decaying *Polyporus.*

Atractium, *Link.*

A. flammeum, *Berk.*
On willow bark.

Sporocybe, *Fries.*

S. atra, *Saccardo.*
On dry leaves of *Holcus mollis.*

Graphium, *Corda.*

G. graminum, *Cke. & Mass.*
On dead leaves of *Gynerium argenteum.*

G. Passerinii, *Saccardo.*
On dead stems of *Gynerium argenteum.*

G. subulatum, *Saccardo.*
On bark.

G. flexuosum, *Saccardo.*
On bark.

Stysanus, *Corda.*

S. Stemonites, *Corda.*
On rotten wood.

Arthrobotryum, *Cesati.*

A. atrum, *Berk. & Broome.*
On fallen branches.

## Tuberculariæ.

Tubercularia, *Tode.*

T. vulgaris, *Tode.*
On dead branches.

T. versicolor, *Saccardo.*
On dead branches of *Buxus sempervirens*, which were probably killed by the fungus.

T. subpedicellata, *Schw.*
On dead branches of *Syringa.*

T. Ligustri, *Cke.*
On dying branches of *Ligustrum ovalifolium.*

T. Euonymi, *Roum.*
On branches of *Euonymus europæus.*

T. expallens, *Fries.*
On dead branches of *Aesculus Hippocastanum.*

T. Aesculi, *Opiz.*
On branches of *Aesculus Hippocastanum.*

T. Sambuci, *Corda.*
On branches of *Sambucus nigra.*

T. confluens, *Pers.*
On branches of *Acanthopanax spinosum.*

Aegerita, *Pers.*

A. candida, *Pers.*
On damp elder bark.

Volutella, *Tode.*

V. ciliata, *Fries.*
On decaying *Crocus* corms.

V. Hyacinthorum, *Berk.*
On decaying hyacinth bulbs.

V. setosa, *Berk.*
On dead stems of *Lilium candidum.*

Bactridium, *Kunze.*

B. flavum, *Kunze.*
On rotten wood.

Fusarium, *Link.*

F. pyrochroum, *Saccardo.*
On dead branches.

F. viticola, *Thum.*
On branches of *Vitis inconstans.*

F. diffusum, *Carm.*
On dead thistle stems.

F. roseum, *Link.*
On decaying vegetable matter.

**Fusarium**—*cont.*

**F. heterosporum**, *Nees.*
On the inflorescence of *Holcus mollis.*

**F. bulbigenum**, *Cke. & Mass.*
On bulbs of *Narcissus.*

**Epicoccum**, *Link.*

**E. vulgare**, *Corda.*
On decaying herbaceous stems.

**E. granulatum**, *Penzig.*
On *Sorghum cernuum* and *Scirpus Eriophorum.*

**E. neglectum**, *Desm.*
On leaves of *Phragmites and Scirpus Eriophorum.*

**Epicoccum**—*cont.*

**E. Herbarum**, *Corda.*
On dead leaves of *Typha angustifolia.*

**E. purpurascens**, *Ehrh.*
On decaying stems of *Gynerium argenteum.*

**Myrothecium**, *Tode.*

**M. roridum**, *Tode.*
On decaying vegetable matter.

**M. inundatum**, *Tode.*
On decaying *Boletus luridus.*

**Exosporium**, *Link.*

**E. Tiliæ**, *Link.*
On bark of *Tilia vulgaris.*

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## APPENDIX.

## MYXOGASTRES.

A very beautiful group of organisms, remarkable alike for beauty of form, brilliancy of coloration, and their remarkable life-history. Most of the species are minute, and are not uncommon on rotten wood, moss, &c. There is a difference of opinion as to the affinities of this group, which by some authorities is considered as related to Fungi, whereas others place it in the Animal Kingdom. Coloured figures, along with descriptions of all the British species, are contained in "A Monograph of the Myxogastres." Twenty-five genera and fifty species have been collected in the grounds, just about half the number known to occur in Britain.

### Tubulineæ.

**Tubulina**, *Pers.*

**T. cylindrica**, *Rost.*
On dead wood.

**T. effusa**, *Mass.*
On rotten wood.

**Enteridium**, *Rost.*

**E. olivaceum**, *Rost.*
On stumps.

### Cribrariæ.

**Cribraria**, *Pers.*

**C. intricata**, *Schrad.*
On rotten wood.

**C. argillacea**, *Pers.*
On wood.

**Dictydium**, *Schrad.*

**D. cernuum**, *Nees.*
On rotten wood.

### Stemoniteæ.

Stemonitis, *Gled.*
S. fusca, *Rost.*
On rotten wood.
S. typhina, *Mass.*
On rotten wood.
S. friesiana, *De Bary.*
On dead leaves.

Brefeldia, *Rost.*
B. maxima, *Rost.*
On fallen trunks.

Reticularia, *Bull.*
R. Lycoperdon, *Rost.*
On wood and bark.

### Lamprodermeæ.

Lamproderma, *Rost.*
L. violaceum, *Rost.*
On living *Hypnum.*
L. irideum, *Mass.*
On dead leaves.

Lamproderma—*cont.*
L. arcyrioides, *Rost.*
On rotten wood.

### Arcyrieæ.

Perichæna, *Fries.*
P. corticalis, *Rost.*

Lycogala, *Micheli.*
L. epidendrum, *Rost.*
On fallen trunks.

Prototrichia, *Rost.*
P. cuprea, *Mass.*

Arcyria, *Hill.*
A. punicea, *Rost.*
On rotten wood.
A. incarnata, *Rost.*
On dead bark.
A. nutans, *Rost.*
On rotten wood.
A. cinerea, *Mass.*
On dead wood.

### Trichieæ.

Oligonema, *Rost.*
O. nitens, *Rost.*
On dead bark.

Trichia, *Haller.*
T. fragilis, *Rost.*
On dead wood.
T. varia, *Rost.*
On dead moss.

Trichia—*cont.*
T. abrupta, *Cke.*
On dead wood.
T. scabra, *Rost.*
On dead wood.
T. fallax, *Rost.*
On rotten wood.

### Didymeæ.

Chondrioderma, *Rost.*
C. floriforme, *Rost.*
On mosses.
C. difforme, *Rost.*
On dead hawthorn leaves.

Didymium, *Schrad.*
D. farinaceum, *Schrad.*
On living moss.
D. squamulosum, *Fries.*
On dead leaves.

Didymium—*cont.*

**D. microcarpon**, *Rost.*
On dead leaves.

**D. Clavus**, *Rost.*
On dead twigs.

**D. Serpula**, *Fries.*
On dead oak leaves.

Lepidoderma, *De Bary.*
L. tigrinum, *Rost.*
On rotten wood.

Spumaria, *Pers.*
S. alba, *DC.*
On living grass.

Diachæa, *Fries.*
D. leucopoda, *Rost.*
On dead leaves.

PHYSAREÆ.

Craterium, *Trent.*
**C. confusum**, *Mass.*
On dead grass.
**C. aureum**, *Rost.*
On dead bark.

**Physarum**, *Pers.*
**P. leucopus**, *Rost.*
On dead wood.
**P. leucophæum**, *Fries.*
On dead twigs and moss.
**P. cinereum**, *Rost.*
On dead twigs.
**P. contextum**, *Rost.*
On bark and moss.
**P. cerebrinum**, *Mass.*
On wood and soil in a pot containing palm seeds from Java. Probably an introduced species. (*Monogr. Myx.*, p. 306, fig. 275.)

Badhamia, *Berk.*
B. macrocarpa, *Rost.*
On dead bark.
B. panicea, *Rost.*
On twigs.
B. varia, *Mass.*
On wood.

Tilmadoche, *Rost.*
T. nutans, *Rost.*
On rotten wood.

Leocarpus, *Rost.*
L. fragilis, *Rost.*

Fuligo, *Rost.*
F. varians, *Rost.*
On heap of dead leaves.

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## DLIV.—SPINDLE TREE.

(*Euonymus europæus*, L.)

Inquiries are sometimes directed to Kew as to the manufacture of skewers from spindle-wood. The following interesting particulars respecting this charming British shrub are therefore reprinted from the *St. James's Gazette* for November 7 last.

The spindle tree (*Euonymus europæus*) is one of our native shrubs or small trees possessing great ornamental merit which are overlooked by landscape gardeners. It is deciduous, but its broadly lanceolate leaves of a wavy irregular outline, with minutely serrated edges, turn, before they fall, to a deep rich crimson. The small pale-green cross-like

blossoms, which open in May, are inconspicuous; but the fruit when ripe in October has all the appearance of a flower of brilliant hues. The fruit, indeed, from its colour and shape, is the most distinctive as well as most beautiful feature of the tree. Each berry is four-lobed and of a lively rose-pink. When quite ripe the lobes open, disclosing four large seeds covered with a deep orange-coloured membrane, the seeds and the husk then presenting a curious but attractive contrast. The wood of the spindle tree is exceedingly tough; and the husks and stems of the berries partake of the same character, so that long after the leaves have fallen these remain to enliven the wintry landscape. Birds will not touch them, and with human beings they act as a strong emetic and purgative.

The wood is so compact and tough that it is hard to break and almost impossible to splinter. In the days of domestic industries, when every notable maid minded her wheel, it was in request for the making of spindles; hence its commonest name—a name by which it is known in Germany and Italy. It was also used for making the pointed ends of ox-goads; whence is derived another name of gatter tree, or prickwood. Chaucer calls the berries gaitre-berries, and in the Nonnes Preestes Tale recommends them against ague and the humours.* In Ireland it is called pegwood, because shoemakers use it for pegs for shoes. In France it is also known by the name of priest's cap, from the resemblance of the berry in shape to a biretta. Though goads and spindles are gone out of fashion, the wood is still employed in the making of a variety of small wares—such as skewers, toothpicks, and fine pins for cleaning watches; and artists are said to prefer the charcoal prepared from the branches to any other, partly from its excellent quality and partly because it is easily effaced.

The spindle tree is easily propagated either from seed or from cuttings. It seems to prefer a chalky soil and a mild climate, and consequently flourishes best in the southern counties of England. It is said to be rare in Wales; in Scotland it is almost unknown. A variety of the common spindle tree, bearing berries with white instead of pink husks, is occasionally found; but although the contrast between the white husks and the orange seeds is curious, the effect is less pleasing than that presented by the berries of the commoner sort.

## DLV.—MISCELLANEOUS NOTES.

**Retirement of Sir Robert Meade, G.C.B.**—The disappearance from official life of one who for a quarter of a century has shown the keenest interest in colonial enterprise, and has been continually in communication with Kew in endeavouring to advance it, cannot be passed over without a few words of remembrance. The Hon. Sir Robert Meade, after a varied official career became Assistant under Secretary to the Colonial Office in 1871 and Under-Secretary of State in 1892. He retired on February 28th of the present year.

The assistance which Kew can afford to the Colonies is somewhat difficult to render on ordinary official lines. Plants can neither be transmitted nor treated afterwards by the same mechanical procedure as ordinary Government stores. Economic questions cannot always be

* Chaucer's plant is, however, generally supposed to be the Dogwood (*Cornus sanguinea*, K.).

dealt with on official foolscap. Sir Robert Meade never failed to take a human view of possibilities, and many things were accomplished accordingly which any other method would have made impracticable. A strong personal taste for botany and gardening made him keenly alive to the difficulties and limitations of any aid which could be given effectively to cultural industries in the Colonies. Judicious vigour led him to clear away unnecessary difficulties in assisting any reasonable project. How much the Colonies owed, in this respect, to his unfailing attention to their welfare can never, perhaps, be wholly appreciated.

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**Death of Sir John Thurston, K.C.M.G.**—After 20 years' service in various capacities in the Pacific Sir John Thurston became Governor of Fiji and High Commissioner in the Western Pacific in 1887. He died in February last while still in office. His career was one of those which counts for little in the public eye; yet it was spent in capable and unflinching service on behalf of the Empire. So intimate was his knowledge and so self-sacrificing his devotion to its affairs in the Pacific that his very indispensableness barred his further career in the Colonial service. A correspondence with Kew, begun some 20 years ago, was ever after maintained with unflagging vigour. Although not a scientific man himself Sir John was keenly interested in the Pacific flora, and Kew owes to him many new species which he successfully transmitted to it. The Colony he ruled so long was an object to him of almost parental affection, and his letters to Kew are a continuous record of his efforts to promote its material development.

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**Seed Distribution.**—The following is a statement of the number of packets of seeds distributed from the Royal Gardens during 1896–7 (December 1 to March 31) to other Botanic Institutions at home and abroad:—

| | |
|---|---|
| Hardy herbaceous plants - - - | 7223 |
| Ligneous plants - - - | 3018 |
| Various (mostly tropical) - - - | 457 |
| | 10,698 |

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**Botanical Magazine for March.**—The present number opens with a figure of the magnificent *Wistaria chinensis* var. *multijuga*, which has racemes exceeding two feet in length. It is a native of Japan, and was sent to Kew by Van Houtte, of Ghent, in 1874. *Holothrix orthoceras*, a South African species, flowered in the Royal Gardens in March of last year, tubers having been received from Mrs. Deglon, of Barberton. The figure of *Grevillea hilliana* was prepared from a specimen sent to Kew by Thomas Hanbury, Esq., of La Mortola. It is a native of Eastern Australia. *Dendrobium sarmentosum* from Burma was received from Mr. C. Curtis, F.L.S., Superintendent of the Botanic Gardens and Plantations of Penang. The flowers are violet-scented. *Didymocarpus malayana* is a new species, probably native of Penang, sent to Kew by Messrs. J. Veitch & Sons, of Chelsea.

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Flora of British Central Africa. — The handsome and scholarly monograph on British Central Africa, which has been published by Sir Harry Johnston, late Her Majesty's Commissioner and Consul-General for that region, stands out in marked contrast to the bulk of the ordinary ephemeral geographical literature of the day. Apart from the interest imparted to it by the robust common sense and lively personality of its author, it gives a singularly vivid picture of one of the most important of our African possessions. But it must always remain a standard book of reference on the subject, if only for the pains with which its author has included in it the most accurate information which he could procure on every branch of the natural history of the territory under his charge; and he had moreover spared no pains to have the collections made on which the reports are drawn up.

Kew willingly consented to his request for a list of the plants known to occur in British Central Africa from the materials preserved in the Herbarium of the Royal Gardens. This was accordingly prepared by Mr. I. H. Burkill, M.A., one of the scientific staff. It occupies pages 233–284.

The following introductory note gives some account of the collections upon which it is based.

"The following list, compiled for the most part from the plants and manuscript records in the Herbarium of the Royal Gardens, Kew, must be regarded as provisional. The knowledge of the flora of the British territory north of the Zambezi has been so rapidly extended during recent years, and is yet so imperfectly known, that any account approaching completeness is at present impossible. Little has been published hitherto, and the facts now collected together will serve to bring into one view nearly all we know of the Botany of British Central Africa.

"The first collections were made by two members of the Livingstone Expedition in the years 1861, 1862. Dr. (afterwards Sir) John Kirk and Mr. J. C. Meller, while exploring the course of the Shire River and wandering in the Mañanja hills, made considerable collections, which were transmitted to Kew, some of them in time for description in the *Flora of Tropical Africa*. Subsequently Dr. Kirk journeyed up the Zambezi into the Batoka country, from the highlands of which and from the region of the Victoria Falls other plants were sent home. The new species gathered by him were described in a variety of different publica, tions. In the following years Mr. Horace Waller, residing in the Mañanja hills, continued to transmit plants to Dr. Kirk, who was at that time Her Majesty's Consul in Zanzibar. After this comes a gap of some years in which nothing was added to our knowledge, until Dr. Emil Holub in 1879, returned from a journey during which he had made considerable collections. Of these, a few of the plants had been gathered about Sesheke, almost the most northern point which he reached, and within the territory under consideration. At the same time (1878) Major Serpa Pinto made, in his journey across the continent, a small collection on the table-land over the River Ninda, and the plants of this were, in 1881, described in the *Transactions of the Linnean Society*. Again in this year, 1878, the late Mr. John Buchanan sent to Kew his first collection of Nyasaland plants, and Mr. L. Scott travelled collecting through the Shire Highlands to the head of Lake Nyasa.

"From this date our knowledge has steadily grown. Under the influence and with the help of Sir Harry Johnston, the region of the Shire Highlands has been energetically explored. The frequent mention below of the names of J. Buchanan, G. F. Scott-Elliot, J. McClounie,

J. Last, A. Whyte, and K. C. Cameron shows how much has been done in this region. Further north, in 1879, Mr. Joseph Thomson had gathered plants on the Nyasa-Tanganyika plateau, and these reached Kew in 1880. Messrs. Carson, Nutt, Scott-Elliot, and Sir Harry Johnston have also collected on the plateau, and the first-named on a journey along the Kalungwesi River to Lake Mweru.

"The collection made at Boroma, on the north of the Zambezi, by the Rev. L. Menyharth, is only in part known.

"As a guide to the distribution, the region has been divided into four sections, as follows :—

1. Shire Highlands.
2. Nyasa-Tanganyika plateau; some of the plants probably collected on the German side of the boundary line.
3. Extreme west, where Major Serpa Pinto alone has collected.
4. Upper Zambezi.

"It must be understood that all the plants collected by Buchanan were obtained in the Shire Highlands; all by Carson and Nutt, unless otherwise stated, from the region near the south end of Lake Tanganyika; all from Serpa Pinto from the one plateau near the River Ninda; and all from Menyharth from Boroma. It was not thought necessary to repeat these localities with the collectors' names."

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**Drift Seeds from the Keeling Islands.**—Mr. H. N. Ridley, Director of the Gardens and Forest Department, Straits Settlements, has presented a small collection of drift seeds from the Keeling or Cocos Islands, made by Mr. G. C. Ross, the present lessee of the islands. It contains little that has not been collected before under the same conditions, but it may be worth while putting the names on record. They are:—*Carapa moluccensis*, Lam., three or four species of *Mucuna*, *Erythrina indica*?, *Cynometra cauliflora*, L., *Cæsalpinia Bonducella*, Fl., *Entada scandens*, Benth., *Barringtonia*, *Terminalia Catappa*, L., *Hernandia*, three or four species of *Quercus*, *Aleurites triloba*, Forst., and *Cycas circinalis*, L.

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**Algæ in the Kew Herbarium.**—The re-arrangement and cataloguing of the Algæ in the Kew Herbarium will greatly facilitate reference to this extensive and valuable collection. For the sake of convenience the classification and nomenclature adopted are those of De Toni's *Sylloge Algarum*, and in this book the numbering of all the species consecutively is of considerable advantage for cataloguing purposes.

An especial value and interest attach to the Kew collection of Algæ on account of the large number of original specimens received at first hand from the old pioneers of algology, as well as from later and recent authorities. Foremost among these stands the type collection of Dawson Turner, mostly mounted on glass slips and enclosed in envelopes labelled in his own handwriting. To this must be added the numerous type specimens of Robert Brown, Stackhouse, Greville, Harvey, and others of our own countrymen; whilst the rich herbaria of the Hookers father and son, of Berkeley, and of Mrs. Griffiths furnish abundant material from the older continental authorities, supplemented by the more recent exsiccatæ of Rabenhorst, Hauck, Wittrock, and Nordstedt, and the contributions of the veteran J. G. Agardh.

It is not generally known that on the shelves of the Kew Library are to be found a series of volumes of coloured drawings by Miss Turner, Miss Hutchins, Carmichael, Dawson Turner, and others. These drawings are executed with great skill, and being in most cases accompanied by manuscript descriptions, present a mine of unworked material for future students of British algology.

The catalogue which is being prepared gives the locality and collector's name for every specimen in the herbarium, so that a preliminary glance at this list will show how far any particular species is represented, and on whose authority.

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**Broom Root.**—An account of Broom root or Mexican whisk obtained from one or more species of grasses belonging to the genus *Epicampes* was given in the *Kew Bulletin* for December 1887 (p. 9). The roots in the condition in which they are exported are known as "Raiz de Zacaton." During some years very little has been exported, but latterly increased interest has been taken in them as a cheap substitute for the well-known Venetian whisk, derived from the roots of *Chrysopogon Gryllus*. The most recent information respecting Broom root is contained in the following 'Report for the year 1895 on the Trade of Mexico' (F.O., 1896, Annual Series, No. 1827) :—

"From the roots of a coarse tufty grass, known as "Zacaton," which is found growing wild all over the highlands of Mexico, a fibre is extracted called "Raiz de Zacaton," which has found a market abroad for the manufacture of certain kinds of brushes and whisks. It is collected by hand, and is subjected to very little treatment before being baled, beyond being soaked in water and bleached in the sun. The principal market for this fibre is Hamburg, but the United States and France both take a certain amount. It has never obtained a foothold in the English market. The export in 1895 was valued at 67,599*l*. The price, according to the New York quotations, ranged in the year under question from 6c. to 14c. per lb., according to quality."

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**Snowdrop Disease.**—Snowdrops are liable to be affected with a disease caused by a fungus (*Sclerotinia Galanthi*). The following treatment is recommended for keeping it in check :—

Spray at intervals of three days with a dilute solution of Bordeaux mixture*, or a rose-red solution of Condy's fluid. Do not spray when the sun is shining. This will arrest the spread of the fungus, but will not cure those plants already attacked. A white mould, or *Botrytis* stage of the fungus, originates from very minute sclerotia or resting stages, formed in the bulbs of the previous season. These sclerotia germinate, grow up the flower stalk, and produce their crop of spores in the air. These, in turn, germinate on the ground, grow down to the bulbs and attack those that are healthy, forming sclerotia which will in the following season produce the *Botrytis* form. The great point is to destroy the white mould, and thus prevent healthy bulbs from becoming infected.

G. M.

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* See *Kew Bulletin*, 1889, p. 229.

**A Canna Disease.**—A dangerous disease, by which species of *Canna* are quickly destroyed, was first recorded from San Paulo, in Brazil, in 1884. Quite recently an account of the destruction of Cannas, by what proves to be the same fungus, *Uredo Cannæ*, Winter, has been received from Mr. J. H. Hart, Superintendent of the Botanic Gardens, Trinidad. Diseased leaves are at first thickly studded with minute, yellowish spots; this appearance is quickly followed by blackening and death. The disease does not appear to have reached Europe as yet, and great care should be exercised in receiving living plants from the New World, as the fungus, which is a close ally of the Hollyhock rust, *Puccinia Malvacearum*, if once introduced, would, in all probability, render impossible, for a time at least, the cultivation of Cannas.

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**Double Rice.**—In the *Proceedings of the Asiatic Society of Bengal* for April 1896, Dr. D. Prain describes and figures what is known in India as Double Rice. In all cases the phenomenon was found to be due to an increase in the number of ovaries, the other parts of the flower being invariably of the normal number. In the gynæceum of over 150 flowers examined not one was found with fewer than four ovaries, all apparently perfect; the usual number being five. A few flowers were found to have six, and one or two had seven ovaries. When five, six, or seven ovaries were present, sometimes only three, but usually four or five appeared to be perfect. The ovaries may be one-, two-, or three-styled. Usually only two ovaries develop into grain, sometimes three, and their shape is modified accordingly.

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**Sorghum Sugar.**—The Sugar Sorghum or Broom Corn (*Andropogon Sorghum*, Brot., var. *Saccharatus*, Koern., is a grass largely cultivated in Northern India, China, and Japan, as well as in the United States. It is, however, native of none of these countries, and its original home is obscure, but is probably Tropical Africa. For many years past a strenuous effort has been made in North America to utilise the sugar sorghum as a source of sugar in a zone north of that in which the sugar cane is grown. The result has not, however, been very successful, as the sugar can only be obtained for the most part in an uncrystallizable form. Syrup is, however, a large article of consumption in the United States, and this alone affords the industry a chance of success.

The following extract from *The Louisiana Planter* for December 1, 1894, gives what is no doubt a correct account of the industry from an American point of view.

"*The Sorghum Industry.*—Sorghum manufacture consists in making syrup and also sugar. It is a common error to measure the sorghum industry simply by its yield of sugar. The value of the sorghum syrup product of the country is greater than the value of the sorghum sugar. In small factories syrup only is produced, and in large factories syrup, sugar, and molasses are produced. The sorghum crop is of sufficient importance in twenty-four States to be reported monthly by the government statistician, along with sugar cane, rice, wheat, corn, and other leading crops of the country.

"The season for sorghum manufacture usually begins in August. At that season sugar cane syrup is not found in market. There is, then, a general demand for 'new crop syrup.' At the beginning of the season

the syrup factories find a home market for their product, and the sugar factories use quantities of cane which is not fully ripe in the manufacture of syrup.

"The beet sugar factories and the sorghum sugar factories have a considerable advantage in the fact that there is usually an active demand for sugar in the months of August and September for use in preserving fruits. As a rule sugar brings a higher price in those months than it brings in the months in which Louisiana sugar is marketed. And sorghum has an advantage over beet manufacture in the fact that it is possible to make a fine sorghum syrup during the months when the market is bare of syrup, or whenever syrup pays better than sugar. Sugar refiners utilise a part of the residues of sugar refining by converting them into syrup, and it is said that there is sometimes more profit in the syrup made from the residues than in the refined sugar, for the reason that syrup sometimes brings a relatively higher price than sugar. It seems probable that, for a time, the production of fine, uncrystallizable syrup will form a considerable part of the output of sorghum sugar factories, and that only the best cane which alone is profitable for sugar manufacture will be worked for sugar, and that unripe canes at the beginning of the season, inferior cane during the season, and frosted cane at the end of the season, will be worked for fine syrup, as the inferior residues of sugar refining are worked for fine syrup. So far the sorghum sugar factories have worked mainly for raw sugar, and incidentally for crude syrup. The result has been a small yield of sugar per ton of cane worked for sugar, a large yield of molasses which includes a considerable amount of sugar which cannot be extracted profitably, and inferior syrup which requires the manipulations of the 'mixers' to fit it for use. It is not difficult to make a fine uncrystallizable syrup from sorghum, which is superior for many purposes, if not for all, to the common mixed syrups. Considering the immense sale of mixed syrups, there seems to be room for a syrup which can be produced at a low cost, and which is superior to the mixed syrups. There seems to be little profit in producing an inferior quality of syrup, which is wanted only by mixers, as there is little profit in producing articles of low grade in any line.

"At present it is much easier to improve the manufacture of syrup than it is to immediately improve the extraction of sugar from molasses. The latter is a problem which long troubled sugar cane and beet sugar manufacturers, and it requires time for the sorghum industry to work out that problem, as it required time in the sugar cane and the sugar beet industries. While an increase in sugar yield is and should be the main object of the sorghum sugar factories, yet while accomplishing that object is seems necessary to utilise the cane in the best possible way with regard to immediate financial results.